A CBO STUDY

Financing Social Security: Issues and Options for the Long Run

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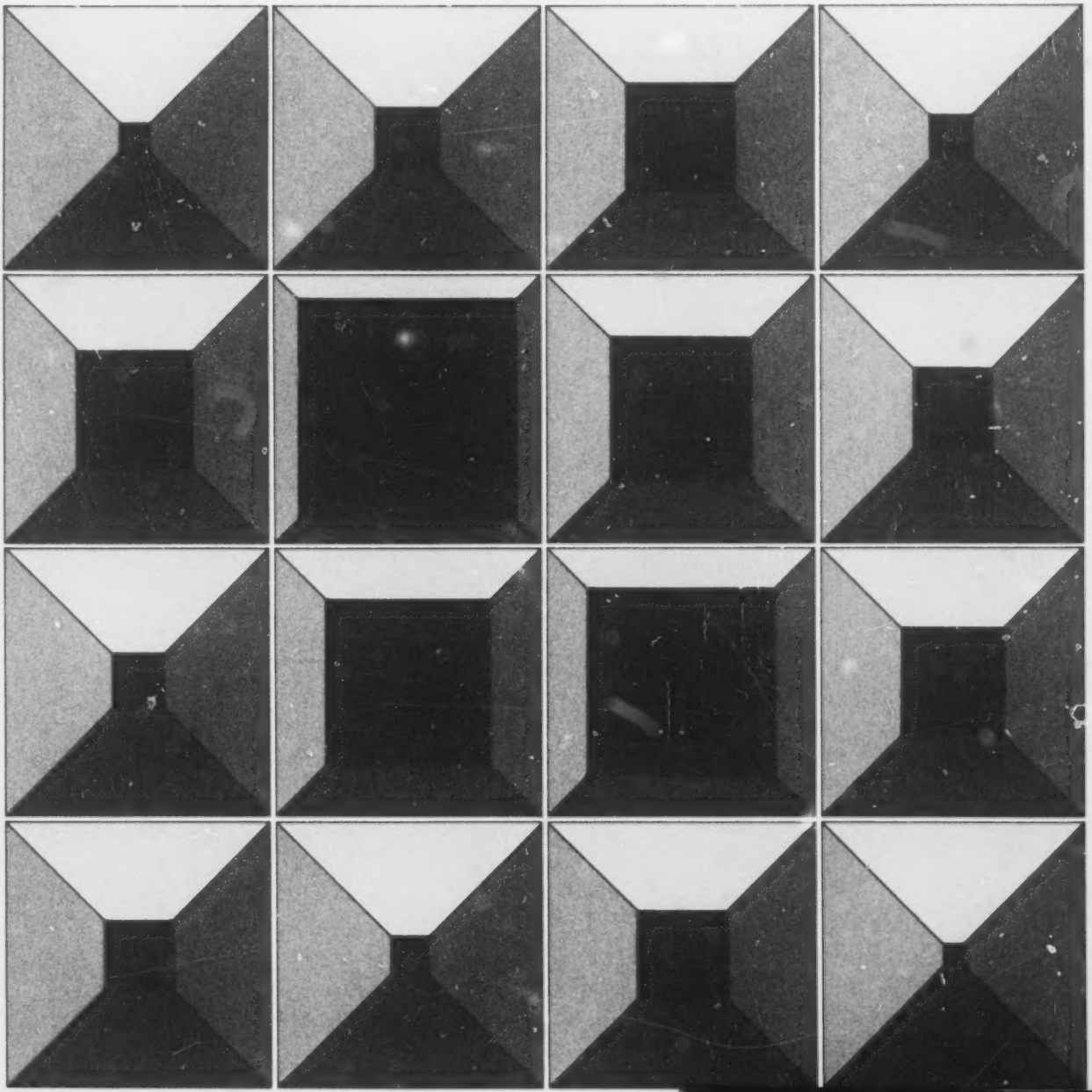

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Financing Social Security:

Issues and Options for the Long Run

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PREFACE

The Social Security program faces financing problems in both the short and the long run, and the Congress will be considering ways to mitigate those problems over the next year. This paper, prepared at the request of the Senate Budget Committee, focuses on the long-run problem, and analyzes a number of options for improving the financial status of the trust funds over the next 75 years. In keeping with the mandate of the Congressional Budget Office (CBO) to provide objective and impartial analysis, this study offers no recommendations.

Patricia Ruggles and Paul Cullinan of the CBO's Human Resources and Community Development Division prepared the paper under the supervision of Nancy M. Gordon and Paul B. Ginsburg. Many people, both outside of CBO and on the CBO staff, provided useful information and helpful comments. The authors especially wish to thank the Social Security Administration's Office of the Actuary, which provided most of the estimates that appear in the paper; particularly helpful were Stephen Goss, Steven McKay, Orlo Nichols, and Wilfredo Cruz. In addition, Robert M. Ball and Robert J. Myers of the National Commission on Social Security Reform, Michael Carozza, John Nelson, and Richard N. Brandon of the Senate Budget Committee staff, James A. Rotherham of the House Budget Committee staff, and Wendell Primus of the House Ways and Means Committee Staff all made useful comments. Within CBO, the authors would like to thank Paul Van de Water, Robert W. Hartman, Richard Mudge, Wilhelmina A. Leigh, and Bruce Vavrichek for their assistance and their comments. The estimates appearing in Appendix C were prepared by Stephen Chaikind and James M. Nason, who also provided useful comments. The manuscript was edited by Francis Pierce and Robert L. Faherty. Norma A. Leake typed the paper and prepared it for publication; Mary V. Braxton typed several early drafts.

Alice M. Rivlin
Director

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SUMMARY

Under current projections, the Social Security system will face major financing problems early in the next century. These problems will result from an expected decline in the number of workers contributing to Social Security relative to the number of people receiving Social Security benefits. In 1980, there were about five people of working age for every person age 65 or older. By 2030, when the "baby boom" generation has retired, there are expected to be only about two and a half people between 20 and 64 years old for each person 65 or over. As the number of workers declines relative to the number of beneficiaries, those of working age will have to contribute a larger proportion of their earnings to Social Security than is now required, if benefits are maintained at current law levels and no other major changes in the program take place.

This paper discusses the size and the timing of the long-run financing problems of the Social Security system, and analyzes a variety of options to mitigate those problems. It concentrates on the Old Age and Survivors Insurance (OASI) and Disability Insurance (DI) trust funds, the two Social Security trust funds that provide cash benefits for retirees, disabled workers, and their families and survivors.

Although the OASDI funds also face some short-run financing problems, these are chiefly economic rather than demographic in nature, and are not discussed in this paper.[1] In addition, although there have been many proposals over the years to make fundamental changes in the Social Security system, this paper discusses only incremental changes that would improve trust-fund balances over the long run while maintaining the current structure of the system.

THE LONG-RUN PROBLEM

The size of the long-run financing problem for Social Security will depend on economic factors as well as demographic ones. The financial position of the system depends on how fast wages grow relative to prices. This is because the major source of income for the system is a tax on wages, while benefit increases are tied to price changes. If a productive economy

1. Appendix C briefly summarizes these problems, however, and presents some short-run financing options.

permits wages to grow faster than prices, revenues will rise faster than benefit levels--to some extent offsetting the growth in the relative number of beneficiaries.

Nevertheless, even assuming that the economy grows at a moderate rate over the long run, an average annual deficit of about 13 percent of outlays is projected for the Social Security system. This projection is based on the intermediate economic and demographic assumptions of the 1982 Social Security Trustees' Report. Projections such as this are quite sensitive to the assumptions on which they are based, however. Under the Trustees' optimistic assumptions, for example, no long-run deficit is projected over the period as a whole, although outlays exceed income in a few years. Under the pessimistic set, on the other hand, the annual deficit over the next 75 years is projected to average about one-third of outlays.

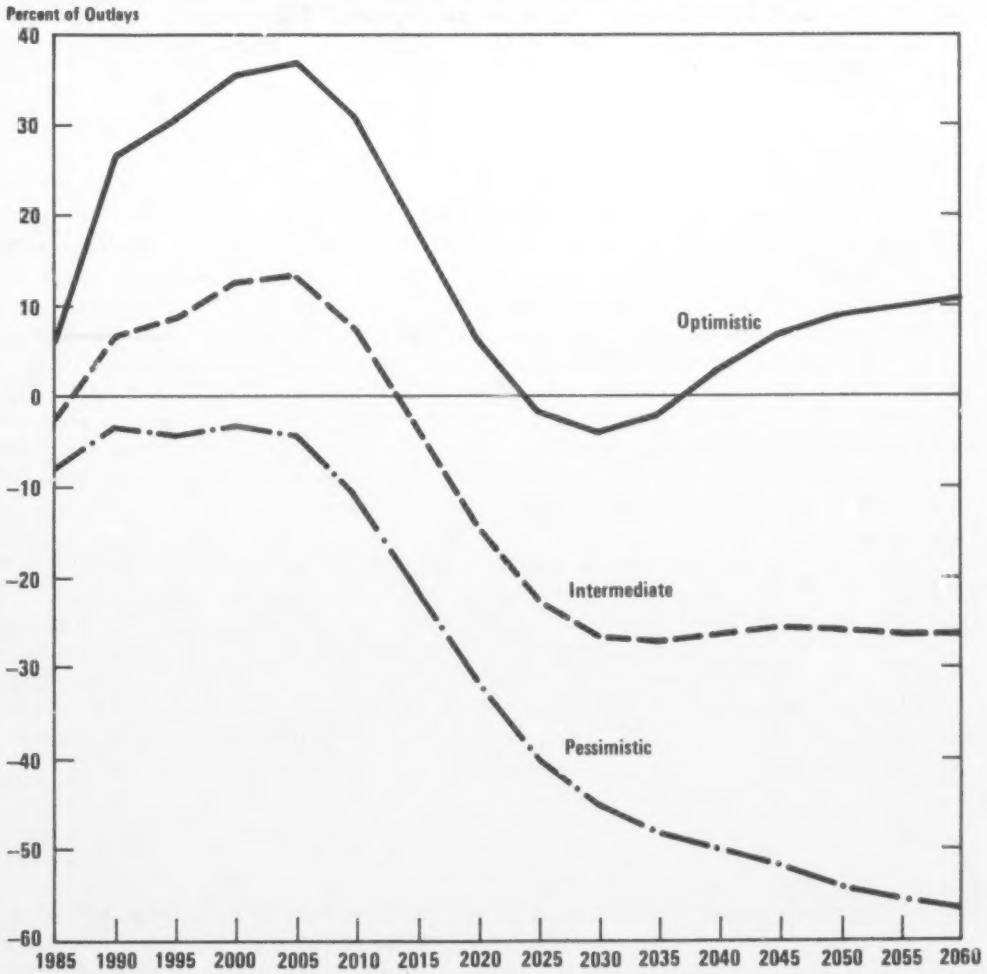
Like the projected deficit, the timing of the financing problem is sensitive to economic and demographic assumptions. Under the intermediate assumptions, which project a moderate rate of economic growth, reserves will be low until the mid-1990s, but in the 20 years between 1995 and 2015 they will grow considerably as trust fund income consistently exceeds outlays (see the Summary Figure). After 2015, reserves are expected to fall rapidly as the baby boom generation retires, and to be exhausted before 2030. Under the pessimistic assumptions, OASDI outlays are projected to exceed revenues over the entire 75 years, though the shortfall would not be as great between 1990 and 2005 as before or after. Only under the optimistic assumptions would the trust funds face no long-run deficit, although even under these assumptions outlays exceed income in 2025-2035.

Even if changes are made in the Social Security system to eliminate its projected deficit on average over the long run, it could still experience temporary financing problems because of short-term economic fluctuations. As the experience of the last few years has demonstrated, trust fund reserves can fall rapidly in periods when price increases exceed wage growth. If such periods recur, temporary insolvency could still be a danger, especially over the next 15 to 20 years when reserve levels will be low.

Long-range projections must be regarded as very uncertain, and some analysts argue that it would be premature to take action now to reduce the size of a long-run deficit that may never materialize. On the other hand, economic and demographic conditions may result in a long-run deficit greater than that projected. Given the uncertainty of the estimates and the potential for severe funding problems, some changes in the system may be desirable now. If economic and demographic conditions should prove to be more favorable than currently projected, future benefits could be increased, or future taxes reduced.

Summary Figure.

OASDI Surplus or Deficit as a Percentage of Outlays, under Three Alternative Sets of Assumptions, 1985-2060



SOURCE: Congressional Budget Office, based on 1982 Annual Report of the Board of Trustees, Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds, Table 29, pp. 67-68. Optimistic assumptions = Alternative I; intermediate assumptions = Alternative II-B; pessimistic assumptions = Alternative III.

NOTE: Figure shows the difference between revenues and costs in each year, rather than OASDI balances. Differences are on an annual basis, and are not cumulative from year to year.

OPTIONS FOR THE LONG RUN

Social Security balances could be improved in two major ways over the long run: benefits could be reduced, or trust fund revenues could be increased.[2] Either approach could be implemented in several alternative ways, as described below. In addition, options that would decrease the sensitivity of trust fund balances to fluctuations in economic performance are outlined.

Benefit Reductions

Reductions in benefits relative to current law could be achieved either by changing the formula used to compute Social Security benefits or by raising the age of retirement. Proposals to change the benefit computation formula would change the relationship between what workers earn over their lifetimes and the benefits they receive when they retire. Under current law, retirement benefits are based on a summary measure of lifetime earnings, to which a formula is applied to arrive at the benefit amount. Two proposals to change this formula to provide lower benefits at any given level of average lifetime earnings are analyzed here--one that would reduce benefits for all earners proportionally, and one that would cut benefits relatively more for those with higher lifetime earnings.

A second way to reduce benefits relative to current law would be to delay retirement, either by reducing benefits for early retirees or by raising the age of eligibility for benefits. Although some do not regard increasing the age of retirement as a benefit cut, this approach would reduce lifetime benefits for most workers, and could be designed to have exactly the same effects on replacement rates--that is, on benefits relative to preretirement earnings--as a change in the computation formula that would provide comparable savings.

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2. The term "reduced," as applied to outlays and benefits in this paper, means reductions relative to the levels that would be reached under current law. Such reductions do not necessarily imply levels lower in dollar terms than those of today. In fact, if wages grow over time as expected, future benefit levels under the benefit-reduction options analyzed here could be higher than today's even after adjusting for inflation, although they would be lower in relation to retirees' lifetime earnings.

Revenue Increases

Trust fund balances could also be improved by increasing revenues. This could be done in several ways--for example, Social Security payroll tax rates could be increased, more workers could be covered by the Social Security system and required to pay Social Security taxes, and Social Security benefits could be subjected to the income tax with the resulting revenues directed to the trust funds. In addition, trust fund revenues could be increased by redirecting funds from other parts of the federal budget to Social Security, although this option would not help to reduce the overall federal budget deficit.

Each of these general approaches to increasing revenues could be implemented in various ways. The specific option to increase payroll taxes analyzed in this paper would involve tax rate increases in 2020 and 2030, which is when they would first become necessary to maintain trust fund balances under the intermediate assumptions. Two different options to extend Social Security coverage are examined--first, coverage of federal employees, and second, coverage of all currently noncovered workers. The particular option to tax benefits discussed here would involve taxing one-half, rather than all, of OASI benefits. The rationale for taxing only one-half of benefits is that income taxes have already been paid by workers on their Social Security contributions, so only the other half of the contributions made on their behalf--those made by their employers--have not yet been taxed.[3]

Stabilization Measures

In addition to changes that would reduce the projected long-run deficit, on average, other options could be implemented to protect the system from the effects of economic fluctuations. These include tying benefit increases to some form of wage index rather than to prices, or to the lower of wage and price increases, so that outlays could not increase faster than revenues. An alternative would be to allow transfers or borrowing from general revenues in periods of poor economic performance.

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3. If Social Security benefits were taxed in the same way as private pensions, with all benefits above the employee's original contribution being taxable, more than 80 percent of benefits would be subject to tax. See Chapter VII for more discussion.

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SUMMARY TABLE. IMPACT OF SELECTED SOCIAL SECURITY OPTIONS ON THE PROJECTED LONG-RUN DEFICIT IN THE SOCIAL SECURITY TRUST FUNDS, UNDER THE INTERMEDIATE ASSUMPTIONS

Option	Percentage Reduction in OASDI Deficit	Timing of Impact	Groups Primarily Affected
Benefit Reductions			
Benefit Formula Changes			
Proportional reductions in benefits[a]	49	Major impact after 1995	All new recipients; benefits reduced proportionally
Reduction in benefits for those with earnings in top formula brackets[b]	50	Major impact after 1995	All new recipients; effects greatest for high-wage earners
Increases in the Age of Retirement			
Increase in the reduction factor for early retirement[c]	39	Immediate	Recipients retiring before age 65
Increase in the age of eligibility for benefits[d]	57	Phase-in completed in 2012	Future recipients retiring after 2000; greatest impact on those who would have retired early

SOURCE: Congressional Budget Office, based on information provided by the Office of the Actuary, Social Security Administration. Estimates use the intermediate (II-B) assumptions.

a. Proposal to reduce percentage of earnings replaced by benefits proportionally in each bracket of formula by about 8 percent over 12 years, beginning in 1984. See Chapter IV for details.

COMPARISON OF LONG-RUN OPTIONS

This report analyzes options to mitigate the long-run OASDI financing problem in three ways: first, their effectiveness in reducing the projected deficit; second, the timing of the savings or revenue increases resulting from the options in relation to the needs of the trust funds; third, their relative effects on the incomes of different groups of beneficiaries and workers.

SUMMARY TABLE. (Continued)

Options	Percentage Reduction in OASDI Deficit	Timing of Impact	Groups Primarily Affected
Tax Increases			
Increase in Payroll Tax Rates by a Total of 1.1 Percent Each for Employers and Employees	52	Increases in 2020 and 2030	All covered workers
Expansion of Coverage[e]			
Federal employees	15	Immediate	All federal workers
All noncovered workers	29	Immediate	All workers in non-covered employment
Taxation of One-Half of OASI Benefits[f]	28	Immediate	Beneficiaries with taxable incomes, with major impact on those with higher incomes

b. Proposal to index "bend points" in benefit computation formula by 75 percent of wage increases for 12 years, beginning in 1984. See Chapter IV for more details.

c. Administration's May 1981 proposal to reduce benefits for age 62 retirees from 80 percent to 55 percent of full benefits, effective immediately.

d. 1981 National Social Security Commission proposal to raise eligibility age by 3 months per year for 12 years, beginning in 2001.

e. Savings are for implementation as of 1984; could also be phased in.

f. Estimate is preliminary and subject to revision. Savings are for implementation as of 1984; could also be phased in. If one-half of DI benefits were also taxed, total revenue increases would be 33 percent of the projected long-run deficit in OASDI.

Magnitude

The Summary Table shows the long-run impact of the options for reducing benefits and for increasing taxes discussed above. Most would provide long-run savings or revenue increases equal to about one-fourth to one-half of the projected long-run deficit. None would by itself entirely solve the financing problems of the trust funds, although two or more options could be combined to achieve this result.

Timing

Most of the benefit-reduction options would be phased in over some period of time, so their major savings would occur 20 or more years from now. Some of the tax-increase options--the partial taxation of benefits or the acceleration of the payroll tax increases scheduled for 1985 and 1990, for example--could be implemented almost immediately, but others--such as Social Security coverage for new employees in currently noncovered jobs--would take longer to produce their major revenue effects.

Because the long-run financing problems are not expected to arise until after 2015 under the intermediate assumptions, options that would have major impacts before then would increase the buildup in trust fund reserves between 1995 and 2015. This could have some impact on the rest of the budget and the economy. If the budget were to be balanced over this period, for example, the accumulation of even larger reserves than already projected would mean, on a year-to-year basis, reductions in other taxes or increases in spending--a situation that would be abruptly reversed in the succeeding ten years.[4] In the past, furthermore, the buildup of large trust fund reserves has resulted in ad hoc benefit increases, so that some safeguards against such increases might be necessary to ensure enough reserves to offset future trust fund deficits. Postponing action would create a different risk: if the economy did not perform as well as projected under the intermediate assumptions, the trust funds would face even more substantial financing problems, and greater measures would be needed in the future to resolve them.

Effects on Beneficiaries and Workers

The options discussed in this paper would vary in their effects on different groups of beneficiaries and workers. Options to reduce benefits while maintaining adequate retirement incomes for low-income beneficiaries would generally reduce the rate of return--that is, benefits in relation to past Social Security tax payments--for those with high lifetime earnings. That rate of return will already be lower, under current law, than the return received by lower-income workers and further reductions would exacerbate this situation.

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4. While Social Security taxes cannot be spent directly on other programs, additions to the reserves reduce the unified federal budget deficit and take the place of other government borrowing, and in that sense provide additional resources to the budget as a whole. See Chapter VIII for further discussion.

On the other hand, a reduction that affected all beneficiaries equally--for example, a proportional reduction in the benefit formula--could threaten the adequacy of retirement incomes for some recipients. Increases in the age of retirement could also have that effect, since those who retire early often have both lower lifetime earnings and less access to other sources of retirement income than those who continue working. The impact of changes in the retirement age on benefit adequacy could be particularly large for those who have health problems that are not sufficiently severe to qualify them for disability benefits, or who become unemployed relatively late in life.

A similar trade-off would affect retirees in different generations. Current retirees are receiving relatively high benefits compared with their Social Security contributions, both because benefit levels were increased substantially during the 1970s and because many have not contributed to the system over their entire working lives. For this reason, benefit reductions that would affect only those retiring in the fairly distant future would reduce rates of return for beneficiaries who, even under current law, will have lower benefits relative to their contributions than those who are retired now or who retire in the near future. If such options were combined with tax increases affecting current workers, who will become future beneficiaries, rates of return for this group would fall even more. On the other hand, since incomes are projected to grow over time, reductions affecting future beneficiaries might have less impact on income adequacy than would reductions in the benefits of current recipients.

Similar considerations apply to options designed to stabilize trust fund balances. If the trust funds were supplemented from general revenues during a recession, the costs would in effect be borne by taxpayers--that is, primarily by workers. If, on the other hand, benefit increases were linked to some form of wage index or to the lower of wages and prices, retirees would share the burden of poor economic performance through reductions in the purchasing power of their benefits. During an extended recession, this type of option could significantly increase poverty among the elderly.

Combinations of Options

Finally, it may be desirable to combine two or more of the options. This could be done in such a way as to add resources to the system as they were needed, thereby avoiding large buildups in trust fund balances. Adjustments could be made if economic conditions turned out to be either better or worse than expected. Combining options could allow the burdens of tax increases and benefit reductions to be spread over a large number of workers and beneficiaries, thus minimizing the impact on any one person.

If options affecting the same groups were combined, however, the total impact on individuals could be very large. For example, if an increase in the age of eligibility for full retirement benefits was combined with one of the changes in the benefit computation formula analyzed in this paper, benefits at age 65 could be reduced by almost one-fourth relative to what they would be under current law.[5] Even for those aged 68, the combined reduction could still be about 13 percent. Similarly, if payroll tax increases were the sole means of eliminating the projected long-run deficit, future Social Security tax burdens would increase by about 15 percent on average over the next 75 years.

Large cumulative effects could be avoided by combining options that did not affect the same groups at the same time. For example, a formula change or an increase in the retirement age for future retirees could be combined with a tax increase affecting primarily workers or with a benefit reduction affecting primarily current beneficiaries. Under such combinations, each person would be affected less, at least at any one time, than under a combination of benefit reductions or a series of payroll tax increases, although some people might be affected at different times in their lives both as workers and as recipients. In addition, by combining options such as a formula change or an increase in the retirement age with a tax increase taking place after 2020, for example, the buildup of much larger reserves than under current law could be avoided.

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5. See Chapter VIII for further details.

Financing Social Security:

Issues and Options for the Long Run

CHAPTER I. INTRODUCTION

The Social Security system faces both a long-term and a short-term financing problem. The long-term problem stems primarily from changes in the age structure of the population that are expected to occur after the year 2000. The short-term problem reflects the current economic situation, which has caused Social Security outlays to rise faster than receipts. Although some action will be necessary within the next year to allow the continued payment of benefits, as the economy recovers payroll tax receipts should provide enough income to cover outlays for retirement, survivors, and disability benefits until the ratio of workers to beneficiaries begins to decline rapidly after 2010.[1]

The long-term problem for Social Security is primarily demographic rather than economic in nature. A decline is expected in the number of workers contributing to Social Security, relative to the number of people receiving Social Security benefits. In 1980, there were about five people of working age for every person age 65 or over. By 2030, when the "baby boom" generation has retired, that ratio is expected to be cut in half, to about two and one-half working-age persons to each person 65 or over. If Social Security benefits were maintained at the same levels as under current law, therefore, and if no other major changes were made in the program, workers would have to contribute a larger proportion of their earnings to Social Security than is now required.

The ratio of workers to beneficiaries at any point in time is important for Social Security, because the system is funded on a pay-as-you-go basis.

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1. The Social Security system consists of three trust funds--the Old Age and Survivors Insurance (OASI) fund, the Disability Insurance (DI) fund, and the Hospital Insurance (HI) fund. Benefits for retirees and their families and for survivors of deceased workers are provided through the OASI fund, the largest of the three funds. Under current law, however, balances in this fund are projected to be so low by the middle of 1983 that action will be needed to pay all benefits on time. Even if authorization for this fund to borrow from the other two trust funds is extended past the current expiration date of December 1982, the problem will be only temporarily postponed. By 1985, reserves in the three funds combined are projected to be too low to allow all benefits to be paid in a timely fashion. For further details on the short-run financing problem, see Appendix C.

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In other words, current tax receipts are used to pay current benefits, rather than being held in reserve to pay benefits for today's workers when they retire. The system does build up reserve funds when tax receipts exceed benefit payments, which it draws against in periods when benefit outlays exceed income. In the last 20 years, however, these funds have never held more than the equivalent of two years' total benefit payments.[2]

The projected decline in the ratio of workers to beneficiaries over the next 75 years is such that--under current law--the income received by the Social Security system is expected to average about 13 percent less than the annual outlays needed to pay benefits.[3] This gap, although large, is not as large as might be anticipated, given the increase in the relative size of the beneficiary population. There are two major reasons for this. First, payroll tax rates are already scheduled to rise under current law, in 1985 and 1990. Tax rates for employers and employees and the self-employed will go up about 15 percent between 1982 and 1990. Second, and even more important, these projections assume that real wages--that is, wages adjusted for inflation--will grow by about one and a half percent a year, on average, over the next 75 years. This rate of growth, which is expected to result in a similar growth in payroll tax receipts, is high compared with the experience of the last 5 years, when real wages have declined by an average of 1.7 percent per year. It is quite comparable to the rate of growth in average annual wages over the 15 years before that, however.

Social Security balances are expected to fall in the 21st century even if the economy performs better over the next few decades than it has in the recent past. The magnitude of the problem will depend to some extent on factors such as productivity increases, birth rates, and mortality rates over the next three or four decades. While these variables are difficult to

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2. While this statement is true of the combined reserves of the three Social Security trust funds, individual funds have accumulated larger reserves in relation to their particular benefit outlays. Unless special enabling legislation is passed, reserves in one trust fund cannot be used to pay benefits from another.

3. This includes taxes and outlays for the OASI and DI programs only. Unless otherwise stated, all long-run projections given in this paper are based on the Alternative II-B economic and demographic assumptions of the 1982 Annual Report of the Board of Trustees, Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds. The CBO does not develop long-run economic projections. The II-B assumptions are given in Appendix B, which also summarizes long-run actuarial cost and revenue estimation methods.

predict accurately, a long-run deficit for the trust funds is projected under all but the most optimistic economic and demographic assumptions.[4]

Thus, it may be desirable to enact legislation now to strengthen the financial position of the system over the long run. In a program like Social Security, around which people make long-term plans and decisions, sudden changes can prove very disruptive. Further, frequent changes and projections of long-run insolvency undermine public confidence in the system.

Long-run balances can be improved in only two major ways: revenues can be increased, or benefits can be reduced relative to the levels they will reach under current law. This paper focuses on these options, and analyzes several specific proposals of each type. In addition, it examines some recent proposals to stabilize trust fund balances in order to prevent recurring fluctuations resulting from cyclical economic performance.

Two important caveats need to be be mentioned before the plan of the paper is presented. First, this paper deals only with the two Social Security trust funds that provide cash benefits--the Old Age and Survivors Insurance (OASI) fund, which provides benefits for retirees and their families and for the survivors of deceased workers, and the Disability Insurance (DI) fund, which provides benefits for disabled workers and their families. The third Social Security trust fund financed through payroll taxes, the Hospital Insurance (HI) trust fund, provides hospitalization benefits under Medicare, and is projected to have much more severe long-run financing problems than the OASI and DI funds.[5] Both the causes and the timing of these problems, however, are different from those facing OASI and DI. Consequently, options for change in HI also differ substantially and therefore are not addressed in this paper.[6]

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4. In this context, the term "optimistic" means favorable to the trust funds. Thus, an optimistic path is one that combines strong economic performance with high mortality and fertility rates. The sensitivity of the long-run estimates to economic and demographic assumptions is discussed in more detail in Chapter II.

5. Medicare benefits other than hospitalization benefits are provided through the Supplementary Medical Insurance (SMI) fund. Although SMI is technically part of the Social Security system, it is funded through general revenues and premiums paid by beneficiaries rather than through the payroll tax, and is not discussed in this paper.

6. For more information on problems facing the Medicare program and on options for that program, see the forthcoming CBO paper on the benefit structure of Medicare.

Second, this paper considers only incremental changes in the Social Security system. It assumes, for example, that Social Security benefits will continue to be linked to lifetime earnings through a benefit computation process similar to that now employed. Similarly, it assumes that financing for Social Security will continue, at least primarily, to be provided through specially earmarked tax revenues. Further, only options aimed primarily at ameliorating the financial problems of the system are discussed here. In the recent past, a number of plans for a more complete restructuring of the Social Security system have been proposed, but these are beyond the scope of this paper. Options of this type include, for example, plans to divide benefits into two parts, one means-tested and the other linked to earnings;[7] earnings-sharing between spouses; and the elimination of benefits for spouses and dependents.[8]

Instead, this paper focuses on options to improve the financial position of the trust funds without changing the basic structure of the system, by reducing benefit levels or by increasing revenues. The next chapter discusses the magnitude of the projected long-run financing problem, and briefly describes the major approaches to its solution discussed in the remainder of the paper. Chapter III outlines the basic benefit computation procedure, in order to allow a better understanding of the specific options presented in the next three chapters. Chapters IV and V analyze two major ways in which outlays for benefits could be reduced relative to current law over the long run: lowering the levels of initial retirement and disability benefits through changes in the computation formula, and raising the retirement age. Chapter VI considers changes in benefit indexation procedures aimed at stabilizing trust fund balances over the long run. Chapter VII then examines various alternatives for generating additional trust fund revenues. The final chapter presents the comparative implications of different means of reducing benefits or raising revenues, and also briefly discusses the effects of combining options of two or more types.

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7. See Michael Boskin, ed., The Crisis in Social Security: Problems and Prospects (Institute for Contemporary Studies, 1977).

8. See U.S. Department of Health, Education, and Welfare, Social Security and the Changing Roles of Men and Women (February 1979); Rita Ricardo Campbell, Supplementary Statement to the Report of the Quadrennial Advisory Council on Social Security (May 1975); and Virginia Reno and Melinda Upp, "Social Security and the Family," American Enterprise Institute Conference on Taxation and the Family, October 1981.

CHAPTER II. THE LONG-RUN FINANCING PROBLEM: BASIC APPROACHES

As discussed in Chapter I, the Social Security program faces a long-run financing problem because of the expected growth in the number of beneficiaries relative to the size of the working population. This chapter considers the dimensions of that problem, provides some background information on the Social Security system, and outlines some options for improving trust fund balances over the long run.

MAGNITUDE OF THE LONG-RUN FINANCING PROBLEM

Over the next 75 years, the Social Security system is expected to have a deficit equal to about 13 percent of annual outlays, on average. Deficits will vary considerably over time, however, as Table 1 shows. Under current projections, trust fund balances will build up between 1990 and 2015, then decline fairly rapidly, and will be depleted sometime between 2025 and 2030.[1]

The estimates of tax rates, costs, and differences shown in Table 1 are all given as percentages of "taxable payroll," which is the total wage base subject to Social Security taxes--about $1.36 trillion in 1982.[2] Thus, the long-run average yearly deficit in OASDI of 1.82 percent of taxable payroll would be equivalent in 1982 to an annual deficit of about $25 billion.

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1. Unless otherwise stated, all long-run projections given in this paper are based on the Alternative II-B economic and demographic assumptions of the 1982 Annual Report of the Board of Trustees, Federal Old Age and Survivors Insurance and Disability Trust Funds. The CBO does not develop long-run economic projections. The II-B assumptions are given in Appendix B, which also summarizes long-run actuarial cost and revenue estimation methods.

2. The 1982 Trustees' Report defines taxable payroll as follows:

   Taxable payroll is defined as that amount which, when multiplied by the combined employee-employer tax rate, yields the total amount of taxes paid by employees, employers, and the self-employed. In practice, the taxable payroll is calculated as a weighted average of

TABLE 1. OASDI TAX RATES, COST RATES, AND RATIOS OF BALANCES TO OUTLAYS, SELECTED YEARS 1985-2060

Year	As a Percentage of Taxable Payroll[a]			Start-of-year Balances as a Percentage of Outlays
	Tax rate[b]	Cost rate[c]	Difference[d]	
1985	11.40	11.70	-0.30	-4
1990	12.40	11.64	0.76	-19
1995	12.40	11.42	0.98	15
2000	12.40	11.03	1.37	64
2005	12.40	10.95	1.45	128
2010	12.40	11.53	0.87	177
2015	12.40	12.82	-0.42	177
2020	12.40	14.44	-2.04	125
2025	12.40	15.97	-3.57	31
2030	12.40	16.83	-4.43	e
2035	12.40	17.02	-4.62	e
2040	12.40	16.80	-4.40	e
2045	12.40	16.66	-4.26	e
2050	12.40	16.72	-4.32	e
2055	12.40	16.81	-4.41	e
2060	12.40	16.81	-4.41	e
		25-year Averages		
1982-2006	12.01	11.37	0.64	33
2007-2031	12.40	14.08	-1.68	e
2032-2056	12.40	16.81	-4.41	e
		75-year Averages		
1982-2056	12.27	14.09	-1.82	e

SOURCE: 1982 Annual Report of the Board of Trustees, Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds; based on Alternative II-B assumptions.

a. Taxable payroll is the total of all wages on which Social Security taxes are paid, adjusted for differences in tax rates.
b. Combined employee-employer tax rate for the OASDI funds.
c. Cost rate is estimated outlays as a percentage of taxable payroll.
d. Difference between tax rates and cost rates.
e. Balances become negative during remainder of the projection period.

Estimates of long-run Social Security costs and revenues are generally expressed as a percentage of taxable payroll rather than as dollar amounts because wages and prices are expected to grow at different rates over time, and it is therefore difficult to assess the meaning of estimates given in terms of future dollars. Taxable payroll provides a useful standard of comparison for long-run costs and revenues, since it is the basis on which revenues are calculated. Social Security revenues can be estimated simply by multiplying taxable payroll by the combined payroll tax rate, since payroll tax receipts account for almost all trust fund revenues.[3] If long-run costs (that is, benefit payments) are also expressed as a proportion of taxable payroll, they can be compared directly with tax rates, to get an estimate of the surplus or deficit in any given time period.

In considering these estimates, it may be helpful to remember that, in 1982, 1 percent of taxable payroll equals almost $14 billion. Thus, for example, a difference between Social Security costs and revenues of 4.43 percent of taxable payroll, as is projected in 2030, would equal about $60 billion if it occurred in 1982.

Several important factors must be considered in assessing the estimates of the magnitude of the long-run financing problems shown in Table 1. For example, although costs are projected to rise faster than revenues, they are not projected to rise as much relative to the gross national product (GNP). Over the next 20 years, total costs will actually decline relative to GNP, from about 5 percent now to less than 4.4 percent in 2005. They will then start to rise, reaching a peak of just over 6 percent of GNP in 2030 (see Table 2). Even if benefits are maintained at current law levels, therefore, the tax rates necessary to pay for them may not increase in proportion to the increase in the population who will be beneficiaries if the economy grows as projected over this period.

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the earnings on which employees, employers, and self-employed persons are taxed. The weighting takes into account the lower tax rates on self-employment income, on tips, and on multiple-employer "excess wages," as compared with the combined employee-employer rate.

3. In addition to payroll taxes, the OASDI trust funds also receive interest on their reserves, and a very small amount of income from general revenues that is used to pay for special benefits not funded through the payroll tax.

TABLE 2. OASDI TAX REVENUES AND COSTS IN RELATION TO GROSS NATIONAL PRODUCT, SELECTED YEARS 1985-2060

Year	As a Percentage of GNP		
	Tax Revenues	Costs	Difference[a]
1985	4.92	5.05	-0.13
1990	5.27	4.94	0.33
1995	5.17	4.76	0.41
2000	5.03	4.48	0.55
2005	4.95	4.36	0.59
2010	4.85	4.51	0.34
2015	4.76	4.92	-0.16
2020	4.66	5.44	-0.78
2025	4.58	5.90	-1.32
2030	4.49	6.10	-1.61
2035	4.41	6.05	-1.64
2040	4.33	5.86	-1.53
2045	4.24	5.70	-1.46
2050	4.17	5.62	-1.45
2055	4.09	5.54	-1.45
2060	4.01	5.44	-1.43

SOURCE: Congressional Budget Office. Calculations based on Alternative II-B assumptions, 1982 OASDI Trustees' Report.

a. Negative numbers indicate a deficit.

Because payroll tax revenues are not projected to increase as fast as GNP, however, the trust fund deficit will grow faster than outlays as a proportion of GNP, and will peak in 2035 at about 1.64 percent of GNP. In part, this growth in the deficit relative to GNP is attributable to the assumption that untaxed fringe benefits such as employer-provided pensions and health insurance will continue to grow as a proportion of employees' total compensation, so tax receipts will be based on a declining proportion of employees' total compensation. If the proportion of total compensation provided as fringe benefits grows more slowly than projected, however, the trust fund deficit will be smaller.

Both because the projected trust fund deficit is small, on average, relative to GNP, and because its size varies significantly over time, some analysts argue that action in the near future to resolve the long-run problem would be premature. As Table 1 shows, the problem is much larger after 2025 than before. Over the next 25 years, an average yearly surplus of 0.64 percent of payroll is projected for the OASDI trust funds under the Alternative II-B assumptions, and trust fund balances do not actually start to decline until about 2015. Moreover, any set of 75-year projections of economic behavior is subject to a wide range of error, so that the projected problems may never materialize.

On the other hand, projections of the long-run financial status of the trust funds are quite sensitive to the economic and demographic assumptions upon which they are based, and the risks associated with worse-than-expected economic and demographic conditions could be quite large. The 1982 Trustees' Report employs a range of economic and demographic assumptions to prepare estimates of long-run costs and revenues. Only under the most optimistic of these, known as Alternative I, is there no long-run deficit in the OASDI funds. Alternative I assumes, for example, that the rate of growth in real wages rises to 3 percent per year by 1987, and then levels off at 2.5 percent per year by 1992. This implies a faster rate of growth in wages than has been sustained for any period of time over the last 25 years. In contrast, under Alternative III, the most pessimistic of the alternatives, the 75-year deficit in the OASDI trust funds is projected to average 6.47 percent of payroll per year--a percentage that would be equivalent to almost $90 billion in 1982. Also, under this alternative, an average yearly deficit of 0.72 percent of payroll in OASDI is projected even over the next 25 years. Alternative III assumes that prices continue to grow faster than wages until 1985, and that after 1985 real wages grow at a slowly increasing rate, leveling off at 1 percent per year in 1992 and later.[4]

Thus, while the financing problems of the trust funds may be much less than is now feared if the economy performs well, if the birth rate is high, and if mortality rates do not decline as sharply as expected, they could also be much worse if the opposite occurs. Given the high degree of uncertainty concerning the Social Security system's long-term financial well-being, it may be desirable to consider options to increase long-run balances in the near future, both to guarantee an adequate phase-in period and to restore public confidence in the system. Should the financial position of the trust funds turn out to be much better than anticipated, future benefits could be increased or taxes reduced.

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4. For more information on the details of these alternative sets of assumptions, see the 1982 Trustees' Report.

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The appropriate set of options for consideration depends to some extent on one's view of the long-run operation and purposes of the system. Before turning to a brief overview of possible types of options and some criteria for choosing among them, therefore, the next section provides some background information on the operation and development of the system.

THE SOCIAL SECURITY PROGRAM: BACKGROUND INFORMATION

The Social Security system is a set of social insurance programs designed to protect workers and their families against income losses and medical costs associated with old age, disability, and death. Social Security cash benefits are paid to retired and disabled workers who have worked long enough to gain insured status, and to their spouses, children, and survivors.[5] In addition, through the Hospital Insurance and Supplementary Medical Insurance programs, Medicare benefits are provided to those who are disabled or over the age of 65, and eligible for Social Security cash benefits.[6]

Social Security cash benefits are paid out of two trust funds--the OASI fund and the DI fund--which are both financed through a tax on wages. As discussed earlier, funding is on a pay-as-you-go basis--that is, current benefits are paid for out of current tax receipts. Social Security payroll taxes are paid by both employers and employees, on earnings up to the maximum taxable wage, which increases every year to reflect general wage growth. Self-employed workers pay taxes at a rate between the employee rate and the combined employer-employee rate.[7]

Benefits are determined for eligible workers according to a formula based on a measure of lifetime earnings. (This process is outlined in detail in Chapter III.) Benefits for spouses, dependents, and survivors depend both on the insured worker's lifetime earnings and on the recipient's relationship to the insured worker. In addition, other factors such as the age of

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5. See Appendix A for a summary of the rules determining eligibility for and amounts of benefit payments.

6. Disabled workers become eligible for Medicare only after a two-year waiting period.

7. In 1982, the maximum taxable wage is $32,400, and the combined tax rate for the OASI and DI trust funds is 5.4 percent each for employers and employees. The rate for self-employed workers is 8.05 percent.

retirement, earnings after retirement, and benefits received by other family members can also affect benefits received.[8]

Although Social Security benefits are based on lifetime earnings in covered employment, workers' benefits are not simply a fixed proportion of earnings. In addition to the adjustments for early retirement and for spouses, children, and so forth, mentioned above, the benefit computation formula itself has been designed to provide benefits that are a higher proportion of preretirement earnings for those with low lifetime earnings than for those with higher earnings. This reflects a perception that relatively high replacement rates--that is, benefits as a proportion of preretirement earnings--are necessary for those with relatively low earnings, in order to help provide them with adequate retirement incomes.[9]

Since the inception of the Social Security system, this concern for benefit adequacy has been balanced against a belief that benefits received should have some relationship to the contributions--that is, tax payments--made by workers. Thus, additional taxable earnings result in benefit entitlements that are higher in absolute terms, but that are a declining proportion of average lifetime earnings. Up to the present, all retirees have had expected lifetime benefits exceeding their contributions; this will not be the case, however, under current projections for some future retirees with high lifetime earnings.

Both coverage and benefit levels have expanded substantially over the years, largely in response to concerns about the adequacy of retirement incomes. The percentage of persons 65 and over receiving Social Security benefits has risen from about 63 percent in 1959 to 91 percent in 1981, and average benefits in real terms have increased by over 60 percent during the same period.[10] At the same time, the proportion of those over 65 in poverty has fallen from about 35 percent to about 15 percent.

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8. For more details, see Appendix A.

9. Another reason for setting lower replacement rates for high earners is that such workers probably paid relatively high taxes during their working lives, so their benefits would be a higher proportion of their after-tax earnings, and their net, or after-tax, replacement rate would be closer to lower-wage earners' than their before-tax rate. In addition, low-wage earners probably benefit less from the tax-exempt status of Social Security.

10. Calculation based on average retired-worker benefits.

Benefits have also increased relative to preretirement earnings, with the largest increases occurring during the early 1970s. The replacement rate for workers retiring at age 65 who always earned the average wage rose from about 35 percent in 1959 to a peak of about 54 percent in 1981, and is now about 49 percent.[11] Replacement rates are higher for those with lower lifetime earnings, and lower for those with higher lifetime earnings.

Much of the increase in benefits during the 1970s was due to a technical flaw in the indexing method contained in the 1972 Social Security amendments. This flaw caused benefits to rise faster than prices, and although it was corrected in the 1977 amendments, all those who were eligible for benefits in 1972 through 1979 now have higher benefit levels than they would have received in the absence of this flaw. Under the 1977 amendments, replacement rates will continue to fall until 1990, when they will stabilize at about 42 percent for an average wage earner retiring at 65.

As discussed earlier, funding is not projected to be available to pay for benefits at the levels scheduled under current law after about 2025. The next section briefly describes the basic approaches available for improving the long-run financial outlook for the trust funds, and discusses possible criteria for choosing among them.

POLICY OPTIONS: AN OVERVIEW

The financial status of the trust funds could be improved in two major ways over the long run: either benefits could be reduced relative to current law, or revenues could be increased. Each of these approaches could be implemented in a number of different ways, however. Nor are these approaches necessarily mutually exclusive--it would certainly be possible to design options that included both benefit reductions and tax increases.

Some important considerations apply to the assessment of either type of approach. These include the magnitude and timing of the impacts of each option, and its effects on different groups of workers and beneficiaries. Options that are similar or complementary in terms of the size and timing of their effects may have quite different impacts on those in different

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11. Because of differences in the treatment of workers born in different years that have resulted from the transitional benefit guarantees enacted in the 1977 Social Security amendments, a 62-year-old worker retiring in 1982 who had always earned the average wage would have a replacement rate (before adjusting for early retirement) of about 43 percent. See Appendix A for further details.

population groups. Some criteria with which options could be assessed include:

- Effects on the adequacy of beneficiaries' incomes, both now and in the future;
- Effects on rates of return on contributions--that is, total expected benefits relative to total contributions--for beneficiaries at different earnings levels and in different generations; and
- Focus of the effects--that is, the extent to which they have large impacts on a few persons or small impacts on many.

The first two of these criteria reflect the system's longstanding goals of maintaining benefit adequacy for low-income retirees, while providing a fair return on taxes paid by those with higher incomes. Most options involve some trade-offs between these goals. Under current law, workers with high earnings receive lower rates of return on their contributions than do those with low earnings.[12] If benefit reductions are focused on those with high earnings, this discrepancy will be increased. Reductions affecting beneficiaries with low lifetime earnings, however, may reduce benefit adequacy and increase poverty rates among the old.

The trade-off between benefit adequacy and the provision of a fair rate of return for all workers also occurs across generations of retirees. Those who are now retired or who will retire in the near future will receive very high rates of return on their Social Security contributions, as compared with those in future generations. On the other hand, real wages, and therefore real benefits, are expected to grow over time, as are benefits from private pension plans, so future generations of retirees may have more resources available to them than do current retirees.

Finally, options could also be judged on the relative magnitude of their impacts for those they do affect. Those that affect a small number of people a great deal may cause greater hardships than those that have a relatively small impact on a large number of people.

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12. In assessing rate-of-return computations, it should be noted that most such computations are based on pretax income and do not include the advantages accruing to high-income beneficiaries from the tax-exempt status of Social Security benefits. In addition, allowance is rarely made for the insurance value of the benefit-indexing provisions.

The remainder of this paper examines specific options for improving trust fund balances, and assesses them against these broad criteria. These specific options include both benefit reductions and revenue increases. A brief overview of the advantages and drawbacks of each of these major approaches is given below.

Benefit Reductions

Major approaches to reducing benefits over the long run include changing the benefit computation formula and increasing the age of retirement.[13] The primary arguments in favor of such cuts are that real benefit levels and retirement incomes from other sources such as pensions are expected to grow over time, so future benefits could be reduced without reducing most retirees' standard of living, relative to the present. In other words, if retirees' incomes grow, benefit levels could be reduced without threatening their adequacy for most recipients.

On the other hand, sources of retirement income other than benefits are not evenly distributed across beneficiaries, and are not generally indexed, so benefit reductions could increase poverty among the elderly, especially if future periods of high inflation occur. If the cuts were concentrated on those with higher benefits, the threat to benefit adequacy would be reduced, but rates of return on contributions could fall to very low levels for some high earners. If incomes grow, cuts affecting primarily those retiring several decades from now would also pose less of a threat to benefit adequacy than cuts implemented now. Rates of return for future retirees will be low even under current law relative to those now received, however, and such options would reduce them further.

Finally, some options, such as changing the benefit computation formula, would affect all new retirees, while others, such as increasing the penalty for retiring early, would primarily affect certain smaller groups of retirees.

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13. Details of these options are given in Chapters IV and V. Although some do not regard increasing the age of retirement as a benefit cut, such an option would reduce lifetime benefits for all workers, and could be designed to have exactly the same effects on replacement rates at various ages as a formula change with comparable savings. Changes in methods of indexing benefits after retirement have not been considered as a major approach to reducing benefits over the long run, although the implementation of such changes as a way of improving trust fund stability is discussed in Chapter VI.

Revenue Increases

The financial outlook for the trust funds could also be improved by increasing revenues. This could be done either by increasing payroll taxes or by allocating revenue to the trust funds from some new source, such as income taxes on benefits.[14] Most options to increase revenues would primarily affect workers, who in general have higher incomes than beneficiaries.[15] In addition, since at any time there are more workers than beneficiaries, a payroll tax increase of a given magnitude would affect workers' incomes less than a benefit cut with the same effect on the trust fund would affect beneficiaries' incomes.

On the other hand, a tax increase affecting workers would reduce workers' returns on contributions, and rates of return are already expected to fall over time as the system matures. If implemented in the near future, such a tax increase would further increase the burden on current workers relative to current retirees. In addition, increases on taxes affecting wages might also reduce work incentives, which could cause workers to work fewer hours and to retire earlier. If this occurred, additional revenues resulting from this approach could be significantly reduced.

Another type of option to increase trust fund revenues would be to transfer funds from general tax revenues, or to allow the trust funds to borrow from general funds. With given targets for the unified budget deficit, however, this option would require either reduced spending in other areas of the budget or increases in other taxes, as compared to other measures to improve trust fund balances.

Stabilization Measures

In addition to the problems associated with the projected long-run deficit, the trust funds could also face some temporary financing problems in future periods of poor economic performance. Even with benefit cuts or increases in revenues as compared with current law, Social Security reserves are likely to be low over the next 15 years, and may be low at other points in the future. Under these circumstances, as recent experience has shown,

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14. Details of these and other options to increase revenues are discussed in Chapter VII.

15. An exception would be taxing Social Security benefits. This would be comparable in its effects to a benefit cut focused on higher-income beneficiaries.

cyclical downturns in the economy can place severe strains on the funds. Thus, in addition to benefit reductions and tax increases aimed at improving average trust fund balances over the long run, this paper also presents several options that would stabilize trust fund balances by preventing large fluctuations in periods when the economy performed poorly.

There are two major approaches to this problem: either benefits could be linked more closely to wages, so that they would grow more slowly in periods of slow wage growth, or additional revenues could be provided to the trust funds in periods of high unemployment or rapid increases in prices relative to wages.[16] In general, options of the first type would protect the trust funds, but could result in reductions in the purchasing power of benefits during economic downturns. Options of the second type would maintain benefit levels but would require additional taxes or spending reductions in other areas, if targets for the unified budget deficit are to be maintained.

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16. These two approaches are outlined in more detail in Chapters VI and VII, respectively.

CHAPTER III. HOW SOCIAL SECURITY BENEFITS ARE COMPUTED

Computing Social Security benefits is a complex process, and the benefit level for any given individual depends on several factors. This chapter outlines the computation procedure, so that the proposals discussed in the following chapters may be better understood.[1]

In broad outline, the computation of an individual retired worker's benefit in any given year has four steps. First, a measure of the worker's average monthly earnings over his or her entire work history is computed. For workers turning 62 after 1978, each year's earnings are indexed by the average annual wages in the economy in that year, and the average earnings amount computed is known as the Average Indexed Monthly Earnings (AIME).

The second step is the calculation of the worker's Primary Insurance Amount (PIA), which is determined by applying a formula to the AIME. Third, the PIA is adjusted for factors such as early retirement, earnings above a certain amount, and the presence of other eligible family members, to arrive at the actual benefit to be paid in the first year of retirement.

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1. Since the focus of this paper is upon the long-run financing problem of the Social Security system, the discussion here outlines the benefit computation process that will be employed to compute the benefits for workers becoming 62 after 1983. Workers who became 62 before 1979 had their benefits computed under a different method, which is discussed in Appendix A. Workers becoming 62 between 1979 and 1983 will have their benefits computed under both a transitional guarantee procedure and the new benefit computation procedure; they will receive whichever benefits are higher as computed under each of the two methods.

   In addition, this chapter focuses on the computation of retirement benefits. The computation of benefits for disabled workers and their families and for survivors of deceased workers follows an analogous process, although some details differ. See Appendix A for more information.

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Finally, that benefit is indexed each year thereafter by increases in prices as measured by the Consumer Price Index.[2]

Total Social Security outlays and individual benefit payments would be affected if the computation process was modified at any of these stages, but the ramifications of proposals to change these stages would vary. The remainder of this chapter outlines each of the steps in the process of computing benefits in more detail.

CALCULATION OF AVERAGE INDEXED MONTHLY EARNINGS

A worker's Average Indexed Monthly Earnings represents the average wage earned in employment covered by Social Security over the working life, with some adjustments. For example, not all years of work are included: for a worker becoming 62 in 1982, the highest 26 years of covered indexed wages are counted. Under current law, this number will increase to 35 years by 1991, and will remain at that level thereafter.[3] This increase in the number of years included in the AIME may, in itself, act to reduce the growth in average benefits, since for many workers it will result in the inclusion of more years of low or even zero earnings in the computation of average lifetime earnings.

After the number of computation years has been determined, the worker's wages in each year of covered employment before age 60 are indexed to wage levels in the year in which age 60 was reached. (Earnings received at and after age 60 are entered without being indexed.) The index used is the average of wages for all workers in each year of the work history. Thus, for example, for a worker turning 60 in 1980, earnings in 1955 would be indexed up to 1980 levels by increasing them by the same percentage that average annual wages for all workers increased between 1955 and 1980; similarly, the worker's 1956 earnings would be increased by

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2. In addition, the benefit is adjusted for any changes in the status of the retired worker or his dependents, such as changes in his earnings or in the number or ages of his dependents, as these changes occur.

3. The number of computation years equals five less than the number of years after 1950 (or the year in which the worker became 21, if that was later) and before the year in which age 62 is reached. Thus, for someone becoming 62 in 1982, it equals (1981-1950)-5, or 26. In 1991, it would equal (1990-1950)-5, or 35.

the percentage increase in average annual wages for all workers between 1956 and 1980; and so on for subsequent years. Only earnings at or below the taxable maximums are used in the computation.[4]

Finally, after earnings in all years have been indexed, earnings from the number of years included in the computation period are summed. If a worker has more years of earnings than must be included in the computation, the years with the lowest indexed earnings are dropped. Similarly, if a worker does not have enough years of covered wages, years with zero earnings are added. Total indexed earnings are then divided by the total number of months in the computation years to arrive at the Average Indexed Monthly Earnings.

If a worker continues to be employed after age 62, these earnings may also be included in the AIME. Earnings received after age 62 may be substituted for those in any previous year if that would result in a higher AIME. Like wages earned between age 60 and age 62, such earnings are not indexed downward to average wage levels in the year the worker turned 60, but rather are included at their nominal values.

Under these computation rules, someone reaching age 62 in 1982 who has always earned the maximum taxable level will have an AIME of $1,493. Someone whose earnings have always equalled the average wage will have an AIME of $1,046. The actual average AIME for those age 62 in 1982 is somewhat lower than this, however, since many workers do not have at least 26 years of covered earnings at retirement.

COMPUTATION OF THE PRIMARY INSURANCE AMOUNT

Once a worker's AIME has been computed, a formula is applied to it in order to calculate the Primary Insurance Amount, which is the base used for computing benefits. Under the formula, 90 percent of the first part of a worker's average monthly earnings is replaced by Social Security benefits, but as AIMEs rise the proportion replaced falls, first to 32 percent and finally to 15 percent. (See Figure 1 for an illustration of the formula.) The rationale for using such a formula is that it increases the adequacy of benefits for those with very low lifetime earnings, while maintaining some connection between earnings and benefit levels.

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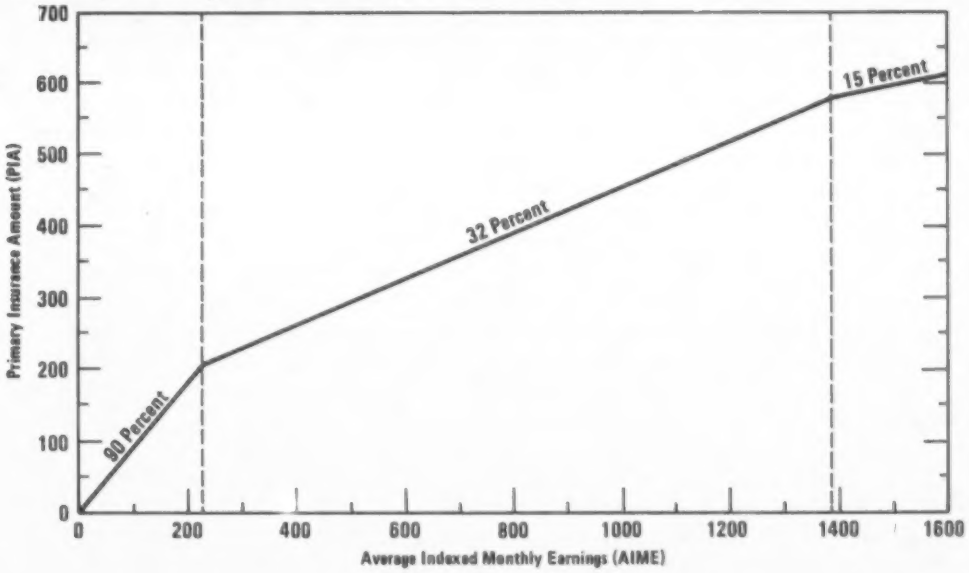
4. Because the limit on wages subject to the payroll tax has been increased irregularly in the past, the timing of earnings near the maximum can affect the indexed total. The maximum taxable wage is now indexed by average annual wages.

Figure 1.

Primary Insurance Amounts in Relation to Average Indexed Monthly Earnings Under Current Law, 1982.



For 1982, the formula is as follows: a worker's basic benefit (or PIA) equals 90 percent of the first $230 of AIME, plus 32 percent of AIME between $230 and $1,388, plus 15 percent of AIME over $1,388. The points at which the percentage of AIME replaced by the PIA changes (in this case, $230 and $1,388) are known as "bend points," because, as Figure 1 illustrates, a line showing the relationship between PIAs and AIMEs bends at those points. Under current law, these bend points are indexed to average annual earnings, so that as wages rise the bend points rise proportionately, and average replacement rates (the ratio of PIA to earnings) are maintained. This also ensures that two individuals with similar earnings histories will have PIAs that are approximately the same proportion of their AIMEs, even if they become 62 in different years.[5]

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5. This assumes that both are subject to the new benefit computation rules. Under the old method, which applies to those born before 1917, and the transitional method, which applies to those born between 1917 and 1921, those with identical earnings records who are born in different years may have markedly different benefits. See Appendix A for more information.

Because of the way the benefit formula is weighted, workers with low average earnings receive benefits that are a higher proportion of their wages than those with high earnings (see Table 3). Thus, a worker who reaches age 62 in 1982 with the maximum AIME of $1,493 under the new computation method will have a PIA equal to $593, about 24 percent of the final year's taxable earnings.[6] Someone with an AIME of $1,046, the level that would represent average earnings over at least 26 years, will have a PIA of $468, or about 41 percent of final earnings.[7] Someone who has earned the minimum wage over a working life of 26 years will, in contrast, have an AIME of only $563 but a PIA of $314, which yields a replacement rate about 54 percent.[8]

COMPUTATION OF BENEFITS BASED ON THE PRIMARY INSURANCE AMOUNT

Social Security benefits are calculated on the basis of a worker's PIA, but they also depend on various characteristics of the recipient, such as age and relationship to the insured worker. In addition to the covered earner who has acquired a PIA through his earnings, various other people may receive benefits based on that PIA. These include, for example, spouses over 62, widows or widowers over 60, surviving or dependent children under 18, and surviving dependent parents age 62 or over. The amount payable will in general be some percentage of the worker's PIA, depending on the recipient's status. For example, workers receive 100 percent of their own PIAs in benefits if they retire at age 65. Spouses of retired workers receive

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6. For an AIME of $1,493, the PIA will be (0.90x230)+(0.32x(1,388-230))+(0.15x(1,493-1,388)), which equals $593.

7. For an AIME of $1,046, the PIA will be (0.90x230)x(0.32x(1,046-230)), which equals $468.

8. For an AIME of $563, the PIA will be (.9x230)+(.32x(563-230)), which equals $314. Lower AIMEs than this are possible, since not all workers have covered earnings for at least 26 years, nor do all work full time or earn at least the minimum wage. In addition, actual benefits for a long-term worker at the minimum wage would be somewhat higher than this, since such a worker would be eligible for the special minimum benefit, which was $321 per month in January 1982. The replacement rate based upon this benefit would be 55.3 percent, rather than 54 percent. For details, see Appendix A.

TABLE 3. AVERAGE INDEXED MONTHLY EARNINGS AND PRIMARY INSURANCE AMOUNTS AT THREE EARNINGS LEVELS FOR EARNERS BECOMING 62 IN 1982[a]

	AIME	PIA	Earnings in 1981	Replacement Rate (Annualized PIA as a percentage of last year's earnings)[b]
Earner with Wages at Federal Minimum Wage[c]	563	314	6,968	54.1
Earner with Wages at Average of All Earners[d]	1,046	468	13,595[e]	41.3
Earner with Wages at Taxable Maximum[f]	1,493	593	29,700	24.0

SOURCE: Congressional Budget Office.

a. Actual benefits payable in 1982 to these workers would be less than the PIA because of reductions due to early retirement.

b. These replacement rates are based on annualized PIAs, and thus do not include the cost-of-living adjustment that would be received in the first year of retirement. They differ slightly, therefore, from replacement rates based on benefits (without early retirement reductions) that are cited elsewhere in the paper.

c. Calculations are based upon full-time work (2,080 hours per year) at the federal minimum wage since 1950. This worker would actually have a PIA of $321, because of the special minimum provisions.

d. Calculations are based upon the earnings of a worker who has earned the average wages in the economy since 1950.

e. Preliminary estimate provided by the Office of the Actuary, the Social Security Administration.

f. Calculations are based upon the earnings of a worker who has earned the Social Security taxable maximum since 1950.

50 percent if they retire at 65 or later.[9] Surviving spouses receive benefits equal to 100 percent of the worker's PIA at age 65, if their spouses never received reduced benefits while alive or did not retire before age 65.[10] Other categories of recipients receive other percentages of PIA. (See Appendix A for a complete list.)

Benefits for both workers and their spouses are reduced if they retire before age 65. The reduction depends upon the number of months before age 65 that they retire, and reaches a maximum reduction of 20 percent of the full benefit at age 62 for retired workers, and 25 percent at age 62 for spouses. Similarly, workers who become 62 after 1978 and retire after 65 receive a delayed retirement credit of 3 percent per year up to age 70.

Total benefits payable on the basis of one worker's earnings are subject to a maximum for any one family. For example, a family containing a surviving spouse under 60 with no earnings and with three dependent children would theoretically be eligible for total family benefits of 300 percent of the deceased worker's PIA (75 percent for the spouse and 75 percent for each child), but in practice the family maximum benefit will be somewhere between 150 percent and 188 percent of the PIA, depending on the level of the PIA.[11] In general, this means that if more than two or three members of a family are eligible for benefits, total family benefits will not increase with additional family members.

Benefits may also be reduced if recipients continue to work after starting to receive benefits. Benefits received by those under age 72 are reduced by $1 for every $2 of earnings over a certain exempt amount.[12] In

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9. Spouses' benefits equal the higher of the benefits to which they are entitled on the basis of their own earnings records or those to which they are entitled as spouses. If they are entitled to retired workers' benefits, they receive these benefits plus any amount by which the spouses' benefits exceed the retired workers' benefit.

10. For surviving spouses 65 or over, benefits are limited to the amount the deceased worker would have received if alive, but will be at least 82.5 percent of the PIA.

11. For those with PIAs calculated in 1982, the formula for the family maximum benefit is as follows: 150 percent of the first $294 of PIA, plus 272 percent of PIA between $294 and $425, plus 134 percent of PIA between $425 and $554, plus 175 percent of PIA over $554.

12. Under current law, the age at which the earnings test does not apply will be lowered to 70 in January 1983.

1982, this "earnings test" applied to earnings over $6,000 for recipients aged 65-71 and $4,440 for those under age 65.[13]

Finally, after benefits have been calculated and have started to be paid, they are increased every year to reflect changes in the cost of living, as measured by the Consumer Price Index.[14] The appropriateness of this index, and the implications of its use for benefit levels, total costs, and trust fund stability are discussed in Chapter VI.

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13. Limits on earnings for disabled beneficiaries are somewhat different. See Appendix A for details.

14. Benefits are not increased if the CPI has not risen by at least 3 percent, measured on a first-quarter-to-first-quarter basis.

CHAPTER IV. CHANGES IN THE COMPUTATION OF INITIAL SOCIAL SECURITY BENEFITS

The long-run financial outlook for Social Security could be improved by reducing the relative level of benefits for all new beneficiaries. One way to do this would be to change the benefit computation procedure outlined in the last chapter.

Such a change would have several advantages as a means of restraining growth in the long-run costs of the system. It would affect the majority of new beneficiaries similarly, rather than concentrating its effects on particular subgroups within the beneficiary population as do other savings proposals.[1] Changes in the benefit computation formula could be phased in gradually, if desired, in order to reduce disparities among different age groups. Moreover, if wages increased faster than prices in the future, as is expected, gradual phase-in might allow real benefit levels to continue to rise--although more slowly than under current law--even with the gradual decline in replacement rates. And if total resources available for benefit payments were found to be greater than expected, most of the proposed formula changes could also be phased out relatively easily (although recipients whose basic benefit levels had been lowered as a result of the formula change would, in general, continue to have relatively lower benefits, unless ad hoc benefit increases were provided).

Proposals to change benefit computation methods also have some drawbacks. In general, they would affect only new beneficiaries, who even under current law will receive lower benefits relative to contributions than those now on the rolls. In addition, for some of these proposals the total impact would depend heavily on the rate of growth in wages and the rate of inflation, both of which are difficult to predict accurately. Further, some of the proposed changes would lower replacement rates most for those with higher benefits, whose benefits are already a relatively small proportion of wages. This could be seen as undesirable, since it would increase the already existing disparity between rates of return on contributions for high

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1. Changes in the reduction factors for early retirement would also lower initial benefits for some, although not all, beneficiaries. Such reductions do not relate to the computation of the basic benefit or PIA, however; instead, they are imposed after the PIA is computed. Therefore, they are not discussed here but rather in Chapter V.

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earners and those for lower earners. Finally, some of the proposals are fairly complex, and both their intent and their probable effects may be difficult to explain or to understand.

Changes in calculating benefits could be made in either of two ways: by altering one or more of the components of the formula used to compute PIAs, or by using a different index to calculate AIMEs, upon which the PIA calculation is based.[2] Most recent proposals to change benefit computation methods have concentrated on the calculation of the PIA. Accordingly, this chapter first examines possible modifications to the PIA formula, and then looks briefly at ways the calculation of AIMEs could be altered.

OPTIONS FOR CHANGING THE CALCULATION OF THE PRIMARY INSURANCE AMOUNT

As noted in Chapter III, PIAs are calculated by applying a progressive formula to each worker's AIME. This formula has three brackets, and a declining percentage of earnings is included in the PIA from each successive bracket. For example, for those turning 62, dying, or becoming disabled in 1982, PIAs equal 90 percent of each worker's AIME up to $230, 32 percent of the AIME between $230 and $1,388, and 15 percent of the AIME over $1,388. The two dollar amounts in this formula, $230 and $1,388, known as bend points, are adjusted each year to reflect changes in average annual wages, so a new formula is created each year for each new group of workers becoming eligible for benefits.

Reductions in Bend Points

Recently, the discussion of ways to restructure the benefit formula has focused on reductions in the formula bend points relative to AIMEs. If the bend points were indexed by 75 percent (rather than the current 100 percent) of the increase in average wages, for example, over a period of 12 years beginning in 1984, they would decline gradually relative to AIMEs.[3]

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2. For more information on the benefit computation process, see Chapter III.

3. The Administration included a somewhat more rapid decline in bend points as part of its May 1981 package of Social Security proposals. The formula change proposed there would have involved indexing bend points by 50 percent of wage increases over a period of six years. A faster implementation of such a proposal would result in greater

Thus, a larger proportion of each worker's AIME would fall into the upper brackets of the formula, where the percentage of earnings replaced by benefits is lower. As a result, replacement rates (annualized PIAs as a proportion of the final year's earnings) would fall for almost all workers over the 12-year period, but would stabilize at those lower rates when full wage indexation of the bend points resumed in 1996.

Under this proposal, PIAs would decline most for those with relatively high AIMEs, as Figure 2 shows.[4] In general, those with AIMEs at or above the higher bend point under the current law formula (point D in Figure 2) would have the largest relative decline in their benefits under the proposal, since a larger proportion of their AIMEs would be shifted into the top bracket of the formula where replacement rates are the lowest. Because of the shift in the bend points, however, workers with AIMEs near the lower bend point (point B in Figure 2) would also experience relatively large reductions. Only a small proportion of recipients--those with AIMEs below point A in Figure 2--would be completely unaffected by the reduction in bend points.

Reducing bend points in this way would produce substantial long-run savings--about 0.9 percent of payroll over the next 75 years (see Table 4).[5] If the reductions were phased in over a period of 12 years, major differences in benefits received by those born a few years apart could be avoided, and projected benefits would be changed very little for those retiring in the very near future. After the proposal was fully phased in, benefits would be reduced by about 8 percent on average, although those who were retired

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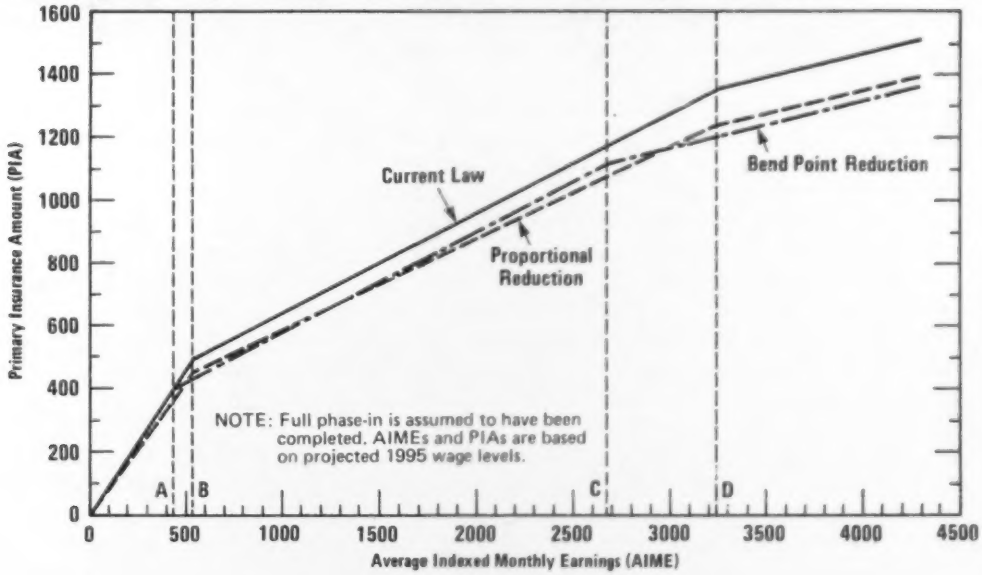
savings, but would increase disparities between different retirement cohorts. The 12-year restriction on the increase in bend points is an option proposed by the staff of the National Commission on Social Security Reform.

4. Since this proposal would affect bend points prospectively, Figure 2 shows PIAs and AIMEs under current law and under the proposal as they would be after 12 years. Bend points inflated to 1995 levels would be $537 and $3,234 under current law (using the Alternative II-B projections of average growth in wages) and $445 and $2,684 under the proposal. The AIMEs of full-time workers--minimum wage earner, average earner, and maximum wage earner--who would be age 62 in 1995 are projected to be $1,264, $2,432, and $4,303, respectively.

5. This compares to an estimated long-run deficit in OASDI of 1.8 percent of long-run payroll. Total savings would of course depend upon the level of wage growth during the phase-in years.

Figure 2.

Primary Insurance Amounts in Relation to Average Indexed Monthly Earnings Under Current Law and Two Options, 1995.



before the phase-in started would be unaffected. Because those with the highest earnings--who are also those most likely to have incomes from private pensions and investments--would experience the greatest decline in benefits, it could be argued that this proposal would focus cuts on those best able to afford them.

On the other hand, rates of return on Social Security taxes paid are already lower for high earners than for those with low earnings, and by the end of this century contributions will exceed expected benefits for some high earners, even under current law.[6] Any change in the benefit formula that further reduced benefits for those with high earnings would exacerbate this situation.

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6. See Robert J. Myers, "Money's Worth Comparison for Social Security Benefits," National Commission on Social Security Reform, Memorandum 45 (August 12, 1982).

TABLE 4. LONG-RUN SAVINGS OF SEVERAL FORMULA CHANGE OPTIONS, RELATIVE TO CURRENT LAW (As a percentage of taxable payroll)[a]

Option	Total, 1982-2056	Twenty-five-year Periods		
		1982-2006	2007-2031	2032-2056
Change PIA Formula				
Index bend points by 75 percent of increase in wages, for 12 years[b]	0.90	0.26	1.09	1.36
Reduce replacement rates within brackets proportionately, for 12 years[b]	0.89	0.25	1.08	1.35
Change AIME Formula				
Index earnings by the CPI, bend points by wages[c]	1.06	0.14	1.20	1.85
Index both earnings and bend points by the CPI[c]	2.83	0.27	2.76	5.45

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration based on Alternative II-B assumptions, 1982 OASDI Trustees' Report.

a. Taxable payroll is the total of all wages on which Social Security taxes are paid.

b. Proposals would first affect the benefit formula in 1984.

c. Estimates based on indexing changes beginning in 1983.

In addition, if the increase in bend points did not exceed the increase in benefits resulting from the cost-of-living adjustment (COLA) in any given year, this proposal could result in lower real benefits for those retiring in that year than for those retiring earlier. This situation already occurs in some years when wage growth is less than price growth, but this option could exacerbate it. In order to avoid this problem, reductions could be limited to the higher of 75 percent of wages or the previous year's COLA.[7]

Changes in Replacement Rates Within Brackets

An alternative to changing the formula bend points would be to change the percentage replacement rates within each bracket of the formula. For example, these rates could be reduced proportionately over a period of 12 years, so as to provide long-run savings comparable to those achieved under the proposal to reduce bend points. This option would result in a somewhat flatter replacement curve overall than under present law, but all workers' PIAs would be reduced by the same proportion. Thus, for any given worker, the PIA under this option would be the same proportion of current law PIA, regardless of the level of the worker's AIME.

If replacement rates were reduced proportionately in all three brackets, rates of 82.7 percent in the first bracket, 29.4 percent in the second bracket, and 13.8 percent in the highest bracket would be needed to achieve the same long-run savings as under the bend-point option. The current law rates are 90 percent, 32 percent, and 15 percent.

Under this proposal, PIAs for those with very high earnings would be reduced less than under the bend-point proposal, while those for workers with AIMEs near the average would be reduced somewhat more (see Figure 2). Benefits for those with very low AIMEs--below the lowest bend point--would also be lower than under the bend-point option, although they would still be a larger proportion of earnings for these workers than for those with higher earnings.

Since this option would maintain the present relative distribution of benefits, its advantages and drawbacks would be similar to those of the

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7. Alternatively, bend-point increases could be linked to the same index as the COLA. Indexing bend points by the CPI would save 2.03 percent of payroll over the next 75 years. If bend points continued to be indexed by the CPI over the long run, however, declines in benefits relative to current law, and in replacement rates, would be continuing and very substantial. See further discussion below.

current law formula. For example, under this option retirees with high AIMEs would have their rates of return on contributions reduced by the same proportions as all other retirees, rather than by a larger percentage than the average as under the bend-point option. Since their rates of return are already lower than those of other workers, this may be seen as an advantage. On the other hand, these beneficiaries are more likely than other Social Security recipients to have other sources of income such as private pensions and investments, and may therefore be better able to adjust to lower benefit levels. Further, such recipients may also benefit more from the tax-exempt status of Social Security benefits.

Additionally, this formula would result in lower benefits for those with very low AIMEs than either current law or the bend-point proposal.[8] Those with low AIMEs who would lose under the reduced replacement-rate option would, for the most part, be those with limited work histories, since it is difficult to have an AIME below $200 (approximately the point at which the proposed formula would become more favorable than the reduced bend-point formula) if a person has worked steadily in covered employment.[9] A worker with lifetime earnings at the minimum wage who became 62 in 1982, for example, would have an AIME of $563. Many workers with AIMEs lower than $200, therefore, will have had some other source of income during their working lives, and may continue to do so after retirement. Further, the current benefit structure provides a very high rate of return on contributions for workers with very low AIMEs.

On the other hand, many of those with irregular work histories, and thus low AIMEs, are women who have spent some time out of the labor force because of home responsibilities. Many of them will also be entitled to benefits as spouses or widows, but such benefits may be inadequate for divorced women whose former husbands are still alive. Other workers with discontinuous work histories include those with periods of illness or unemployment, who are also unlikely to have significant incomes in addition to their benefits. Under either the reduced replacement-rate option or the reduced bend-point option, additional protection could be provided to low-income recipients by strengthening means-tested benefit programs for the

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8. PIAs for those with AIMEs just above the first bend point under the reduced bend-point option (point A in figure 2) would actually be slightly higher under a proportional reduction than if bend points were reduced, however (see Figure 2).

9. The $200 figure is in 1982 dollars. Figure 2 is in 1995 terms. In 1995, the AIME at which the proportional formula would become more favorable would be about $500.

elderly and disabled, such as Supplemental Security Income (SSI). This would mitigate the effects of this proposal for low-income beneficiaries, but would also reduce its long-run budget savings.

Thus, the long-run savings generated by these proposed formula changes would be similar, but their effects would differ for different types of beneficiaries. Table 5 summarizes their impact on replacement rates for three types of workers: a minimum wage earner, someone with earnings at the average of earned wages, and someone with earnings at the taxable maximum. Each of these proposals would reduce benefits relative to current law for all three types of workers, but under the bend-point option the impact would be greatest for a maximum wage earner, while under the proportional reduction option, the relative reductions in replacement rates would be the same for all workers.

OPTIONS FOR CHANGING THE COMPUTATION OF AVERAGE INDEXED MONTHLY EARNINGS

Savings could also be generated by changing the method used to calculate AIMEs. Currently, as explained in Chapter III, the AIME consists of a worker's average monthly earnings, corrected for the growth in wages over time. These corrections are based on an index of average annual wages.

Because average wages are projected to grow faster than prices over the long run, one option for reducing AIMEs and hence benefits is to index earnings by the CPI or some other price index, rather than by average wages.[10] The savings to be gained in the immediate future from the implementation of this proposal would probably be limited, since real wage growth is not expected to increase dramatically within the next few years. In the long run, however, the savings from using a price index rather than a wage index to calculate AIMEs could be substantial if wages again start to rise more rapidly than prices, as is expected. If the PIA formula remained as under current law, savings from this proposal would be about 1.06 percent of long-run payroll (see Table 4).

Under this proposal, bend points would continue to be wage indexed, and they would rise relative to the price-indexed AIMEs if real wage growth

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10. See Congressional Budget Office, Financing Social Security: Issues for the Short and Long Term (July 1977), for a discussion of the various indexing options, including indexing earnings by prices, that were considered at the time of the 1977 amendments.

TABLE 5. REPLACEMENT RATES FOR THREE WORKERS AGE 62 IN 1995: CURRENT LAW AND FOUR OPTIONS

Option	Replacement Rate in 1995 (annualized PIA as percentage of last year's earnings)		
	Minimum Wage Earner[a]	Earner with Average Wages[b]	Earner with Wages at Maximum[c]
Current Law	58.0	42.5	25.3
Change PIA Formula			
Index bend points by 75 percent of increase in wages, for 12 years	53.7	40.4	22.8
Reduce replacement rates within brackets proportionately, for 12 years	53.3	39.1	23.3
Change AIME Formula			
Index earnings by the CPI, bend points by wages[d]	56.4	41.0	24.8
Index both earnings and bend points by the CPI[d]	52.8	39.3	22.7

SOURCE: Congressional Budget Office, based upon the Alternative II-B assumptions of the 1982 Trustees' Report.

a. Calculations are based upon the earnings of a worker who always was employed full-time (2,080 hours per year) at the federal minimum. The minimum wage after 1982 is assumed to increase at the same rate as the average earnings in the economy.

b. Calculations are based upon the earnings of a worker who always earned the average wages in the economy.

c. Calculations are based upon the earnings of a worker who always earned the Social Security maximum taxable earnings.

d. Replacement rates would continue to decline for all workers under these proposals, if wage increases exceeded price increases as projected. Replacement rates are calculated assuming that indexing changes begin in 1984.

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took place. This would mean that a higher proportion of all earnings would be shifted back into the bottom brackets where the proportion of AIME replaced is highest. This would result in a flatter overall distribution of benefits that would to some extent offset the savings generated by the shift to price indexation of earnings.

Alternatively, both bend points and earnings could be price indexed. This would maintain the current relationship between AIMEs and PIAs, but would shift more earners into the higher brackets as real wage growth took place, thus reducing replacement rates (see Table 5). Savings from this proposal would be very large--about 2.83 percent of long-run payroll. The effects of the various combinations of wage and price indexing of the formula's bend points and of earnings are summarized in Table 6.

The effects of these proposals on beneficiaries would also depend on the relative behavior of wages and prices. The differential in rates of change between wages and prices has not been constant over time, however. Before 1974, wages generally rose faster than prices, often by a fairly large margin. Since then, prices have often risen faster especially in the last few years. Thus, for any given worker, the difference between wage and price indexing of earnings would depend heavily on which years were included in the earnings history, and on total earnings in each of those years.

Under either of the proposals affecting AIMEs, benefits for successive generations of retirees would rise with price increases and would maintain their real purchasing power over time. Any savings from these proposals would occur as a result of increases in real wages. On the other hand, if real wages grew over the long run, replacement rates would decline, and the standard of living of retirees would fall relative to that of workers. Conversely, in periods like the recent past when price increases exceeded wage increases, benefit levels would rise relative to wage levels, and total outlays under these proposals would be greater than under current law. If the relative behavior of wages and prices continues to be as volatile in the future as in the recent past, and the income of the system is still tied to wages, price indexing of earnings or bend points could lessen the stability of the system and lead to future short-run financing problems.

TABLE 6. EFFECTS (RELATIVE TO CURRENT LAW) OF DIFFERENT INDEXING METHODS FOR EARNINGS AND BEND POINTS

Bend Points Indexed by:	Earnings Indexed by: Wage Index	Earnings Indexed by: CPI
Wage Index	Current law	Benefits reduced because, although the bend points would be the same as under current law, AIMEs would be lower. Savings = 1.06 percent of long-run payroll.
CPI	Benefits reduced because more of AIMEs would be shifted to higher brackets, which have lower replacement rates. Savings = 2.03 percent of long-run payroll.	Benefits reduced because both indexed earnings and bend points would be lower in the future than under current law. Savings = 2.83 percent of long-run payroll.

NOTE: This assumes that wages will rise faster than prices. If--contrary to projections--prices were to increase faster than wages over the long run, effects of these indexing alternatives would differ from those shown. Under those circumstances, price-indexing proposals would increase benefits.

CHAPTER V. CHANGING THE AGE OF RETIREMENT

One frequently recommended solution for the long-term problem of financing rapid increases in the ratio of beneficiaries to workers during the early 21st century is to raise the retirement age.[1] This would expand the pool of workers and decrease the number of beneficiaries. Proponents argue that because life expectancies are increasing, total lifetime benefits per worker will rise considerably under current law. An increase in the retirement age could simply require workers to spend at least some of this increased life expectancy in employment rather than in retirement. On the other hand, a higher retirement age could impose hardships on certain groups of aged workers who might be relatively less able to adjust to such an increase--those in poor health who do not qualify for disability benefits, for example, or the chronically unemployed.

This chapter focuses on options for increasing the age of retirement. The first section describes current retirement practices, both with regard to Social Security policy and with reference to the actual behavior of workers. The next section analyzes several specific options for change. The last section details some of the major factors that affect the age of retirement, and outlines the advantages and drawbacks of proposals for later retirement as they relate to each of these factors.

CURRENT RETIREMENT PRACTICES

Sixty-five has been the age at which a worker becomes eligible for unreduced retirement benefits since the passage of the original Social Security Act in 1935. It was not selected after scientific or gerontological analysis, but rather because it was deemed to be the most acceptable age.[2]

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1. The 1975 and 1979 Quadrennial Advisory Councils on Social Security, the 1981 National Commission on Social Security, and the President's Commission on Pension Policy, for example, all discussed versions of this option.

2. See Wilbur J. Cohen, Retirement Policies Under Social Security (University of California Press, 1957) for discussion of this point.

An element of flexibility was later introduced by permitting early retirement at ages 62-64, but with lower benefits. In addition, workers who delay retirement beyond age 65 receive increased benefits.[3]

The actual pattern of retirement behavior indicates that no single age may be accurately described as "normal." Roughly two out of every three Social Security retired worker beneficiaries begin receiving benefits before age 65. In addition, approximately 20 percent of the age 65-69 population are employed, although some also receive retirement benefits.

POLICY OPTIONS

Social Security could be redesigned in two basic ways to delay retirement. One would be to increase the relative benefits from delaying retirement. The other would be to raise the retirement age. In either case, changes in other programs such as Disability Insurance (DI) and Supplemental Security Income (SSI) could also be made in order to mitigate the adverse impacts of retirement age changes.

Increasing the Relative Benefits for Delayed Retirement

Incentives for later retirement could be increased either by providing greater rewards for those who continue to work or by further reducing the benefits for those who retire early.

Increasing the delayed retirement credit to the same level as the factor used to reduce benefits for those who retire early would probably result in workers remaining employed longer after turning 65, but would not result in long-term outlay savings.[4] If the delayed retirement credit was

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3. Benefits are reduced by 5/9ths of 1 percent for every month of benefits received prior to age 65, with the maximum reduction being 20 percent for those retiring at age 62. This rate of reduction was chosen in order to make expected total lifetime benefits for all retirees with a given PIA approximately the same, regardless of when they actually retire. For each month retirement is delayed (up to age 72), benefits are increased by one-quarter of 1 percent, or 3 percent per year.

4. In fact, because of the benefit recomputation provision, additional earnings might result in increased outlays. See Appendix A for an example of the effects of benefit recomputations.

increased to roughly 9 percent per year,5 workers who now retire at ages 65 to 70 could be expected to work on average about two to three months longer than under current law. Most of the increase in benefits would go to higher-earning beneficiaries, who are more likely to remain employed than are those with lower earnings.

In contrast, reductions in pre-age 65 benefits could result in major cost savings. For example, if benefits at age 62 were reduced to 55 percent of full benefits rather than the current 80 percent, as proposed by the Administration in May 1981, the estimated savings over 75 years could be as much as 0.7 percent of payroll (see Table 7). These savings would result primarily from reduced benefits received by those continuing to retire early, however, rather than from increases in the average age of retirement. If almost all retirees delayed their retirement until 65 as a result of this proposal, there would be no savings.6

Other more limited benefit reductions could also be instituted to encourage some persons to work longer. For example, benefits for children of early retirees could be eliminated, since they may provide an added incentive for some workers to apply for benefits before reaching age 65, while their children are still young enough to be eligible. Since only a relatively small portion of early retirees have young children, however, elimination of such benefits would probably have only a small effect on early retirements. Long-run cost savings resulting from this proposal would also be small--only about 0.02 percent of payroll.

Increasing the Eligibility Age

Raising the age of eligibility for full retirement benefits from 65 to 68 is one of the most commonly mentioned options for reducing Social Security costs, and would result in substantial savings. For example, under the Alternative II-B assumptions of the 1982 Trustees' Report, increasing the retirement age to 68 (and from 62 to 65 for early retirement benefits) over

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5. The specific proposal is to increase the credit so that it would be "actuarially fair." That is, the expected lifetime benefits for a given worker would be the same regardless of the age at which benefits were first received.

6. For further discussion of this and other options to increase retirement ages, see Congressional Budget Office, Work and Retirement: Options for Continued Employment of Older Workers (1982).

TABLE 7. LONG-RUN SAVINGS RELATIVE TO CURRENT LAW OF SEVERAL OPTIONS TO DELAY RETIREMENT (As a percentage of taxable payroll)

Option	Total, 1982-2056	Twenty-five-year Periods		
		1982-2006	2007-2031	2032-2056
Increase Delayed Retirement Credit[a]	-0.15	-0.05	-0.16	-0.23
Reduce Benefits for Early Retirees[b]	0.71	c	c	c
Raise Age of Eligibility for Full Benefits to 68 and Reduced Benefits to 65[d]	1.03	0.12	1.41	1.55
Raise Age of Eligibility for Full Benefits to 68, Without Increase in Eligibility Age for Reduced Benefits[e]	1.17	0.21	1.40	1.89

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration. Negative numbers indicate costs.

a. Increase in Delayed Retirement Credit to actuarially fair equivalent.

b. The Administration's May 1981 proposal to reduce benefits at age 62 to 55 percent of full benefits.

c. Twenty-five-year estimates of savings not available.

d. Based on the proposal of the 1981 National Commission on Social Security, which would allow early retirement benefits at age 65 of 80 percent of the age 68 benefit. Proposal would also index earnings to age 63 rather than to age 60 as under current law. Savings would be larger by about 0.3 percent of long-run payroll if earnings were indexed only to age 60.

e. Based on H.R. 3207 introduced by Congressman Pickle, which raises age for full benefits to 68 and increases the reduction for age 62 benefits to 36 percent from 20 percent.

a 12-year period ending in 2012, as proposed by the 1981 National Commission on Social Security, would reduce the 75-year deficit by an estimated 1.0 percent of payroll.[7] The Commission's proposal would also involve indexing earnings for the computation of AIMEs up to age 63, rather than to age 60 as under current law. If the retirement age was increased as under that proposal, but earnings were indexed only to age 60, the 75-year cost savings would be larger by about 0.3 percent of payroll.

If the age of eligibility for full benefits was raised to 68, but early retirement benefits were still available at 62, benefits received by those retiring before age 65 would have to be reduced in order to maintain the cost savings. Under H.R. 3207, for example, which was introduced by Congressman Pickle, benefits at age 62 would be reduced to 64 percent of the full benefits, rather than 80 percent as under current law. Long-run savings under H.R. 3207 would actually be slightly larger than under the commission's proposal, since earnings would be indexed only to age 60 as under current law, rather than to age 63 as under the proposal.

The arguments for and the potentially adverse consequences of an increase in the age of eligibility for retirement benefits for some older workers are discussed below. To some extent, adverse consequences could be mitigated either through adjustments in existing programs or through the creation of new public programs. For example, the definition of disability under DI and SSI could be liberalized for older workers, to give greater weight to vocational factors. This would allow older workers with health problems sufficiently serious to affect their ability to work in their accustomed occupations to receive some disability benefits, which would to some extent offset the reductions in retirement benefits. Such a proposal would reduce long run cost savings from this option, however.

Retention of age 62 as the early retirement age, but with a greater benefit reduction factor, would also lessen the impact on such workers of an increase in the age of eligibility for full retirement benefits. This option would not necessarily reduce long-run savings resulting from delaying the age of eligibility for full retirement benefits, since total savings would depend upon how much early retirement benefits were reduced. If a reduction factor was chosen that would make age 62 benefits actuarially equivalent to those received at age 68, however, benefits for those retiring at 62 would be reduced to 64 percent of the full retirement benefit.

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7. For further details on this specific proposal, see National Commission on Social Security, Social Security in America's Future, the final report (March 1981), chap. 5.

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PROS AND CONS OF INCREASING THE RETIREMENT AGE

To assess the merits of increasing the age of retirement, different factors must be taken into account. These include health, employment opportunities, and available retirement income.

Health Factors

Some view an increase in the retirement age as a logical response to the major health improvements that have occurred since the beginning of the Social Security program and that are expected to continue. They argue that it is unrealistic to continue a policy that encourages workers to spend all of their increase in expected lifetime in retirement. In this view health improvements, as measured by life expectancy, result in older persons who are healthier than those in earlier generations, and therefore more able to continue active work.

Increases in life expectancy affect the retired worker population for Social Security by increasing both the proportion of successive generations that attain age 65 and the average number of years over which benefits are received. Since the program first paid benefits in 1940, expected lifetimes of individuals have lengthened considerably. For men aged 65, the increase in expected lifetime since 1940 has been 2.2 years or about 18 percent. Increases for women have been even larger--5.1 years or about 38 percent.[8]

These improvements in life expectancies are projected to continue. The average life expectancy of men aged 65 is projected to increase an additional 10.5 percent by the year 2000, and that of women almost 13 percent over the same period. On the basis of these figures, an increase in the retirement age to 68 in the year 2000 would leave male workers with 0.7 more years of retirement benefits than their 1940 counterparts and 1.5 fewer years than those retiring at age 65 in 1980. For women the figures would be 4.5 and 0.6, respectively.[9]

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8. In 1940, average life expectancies at age 65 were 12.1 years for men and 13.6 years for women. U.S. Department of Health and Human Services, Social Security Administration, Office of the Actuary, Social Security Area Population Projections, 1981, Actuarial Study no. 85 (July 1981).

9. These calculations assume that the same proportion of future retirees will retire early as now do. Under the intermediate mortality assumptions of the 1982 Social Security Trustees' Report, men would

These figures obscure substantial differences in life expectancies between different population subgroups. There is evidence that workers in different occupations have systematically different life expectancies, for example, and that those engaged in less arduous employment live longer than those in more strenuous jobs.[10] Moreover, a recent study of Social Security retirees found that men accepting benefits before age 65 had significantly higher mortality rates than those who postponed retirement to age 65 or later.[11] Consequently, an increase in the retirement age could reduce the proportion of workers that live long enough to receive benefits, and therefore could have more of an impact on some groups of workers than on others.

Further, measures of health status other than life expectancies indicate that the ability of older Americans to work may not have improved, or may even have declined slightly over the last decade. Indeed, improvements in life expectancies may partly reflect longer survival periods for those with serious or chronic health problems. A comparison of Health Interview Survey data indicates that in 1980 higher proportions of men in the 60-64 and 65-69 age groups reported being unable to work due to chronic health conditions than in 1970.[12] While these data may reflect many factors other than actual health status, such as changing health expectations, changing life styles, and other problems associated with self-reporting, they lead one to question the assertion that, on average, the health of older workers has improved.

On the other hand, a recent study by the General Accounting Office (GAO) indicates that the proportion of early retirees reporting ill health as their principal reason for retirement has declined considerably over the last decade. According to the GAO study, about 19 percent of early retirees reported that they retired because of poor health, as compared with 54

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not regain their 1980 position until 2050, whereas women could expect the same number of retirement years beginning between 2010 and 2020.

10. Robert M. Butler, Statement before the National Commission on Social Security Reform, June 21, 1982.

11. John R. Wolfe, "Perceived Longevity and Early Retirement," Econometrics Workshop Paper no. 8105, Michigan State University (May 1982).

12. Jacob Feldman, "Work Ability of the Aged Under Conditions of Improving Mortality," Statement before the National Commission on Social Security Reform, June 21, 1982, p. 17.

percent in a Social Security Administration study of workers retiring in 1968 through 1970.[13] This decline may be partially attributable to the expansion of the Disability Insurance program during the 1970s since a larger proportion of those aged 62-64 who are in poor health may now be receiving DI benefits. Since 1977, however, awards for DI benefits have been declining, which may lead to future increases in early retirements because of poor health. In addition, the proportion of workers retiring early increased substantially over this decade, so even if workers' health status has not improved, the proportion retiring early because of ill health would have declined as early retirement for other reasons increased.

If an increase in the age of eligibility for retirement benefits was legislated, presumably some of those who suffered from ill health would become eligible for disability benefits, thereby offsetting some of the reduction in outlays for retirement benefits. The availability of disability benefits for at least some older workers in poor health would also help to mitigate the adverse affects of an increase in the retirement age for this group.

Employment Factors

Arguments for an increased retirement age also assume changes in certain characteristics of future retirees, such as educational attainment. The proportion of the population attending college has grown steadily in recent years, suggesting that this may delay entry into the labor force and shorten working lives. In conjunction with the trend toward less physically demanding jobs, this has led some to argue that a higher proportion of later generations will be able to continue working past age 65.

The trend to college education has not included all workers, however. Almost one-quarter of the work force still lacks high school diplomas, and even among younger workers (those 25-29), about 15 percent have not graduated from high school.[14] Employment opportunities for workers with

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13. General Accounting Office, Demographic and Economic Characteristics of Social Security Retiree Families, HRD-82-131 (September 28, 1982). Social Security Administration, Reaching Retirement Age, Research Report no. 47 (1976).

14. A proposal that would mitigate the effects of an increase in the retirement age for those who start work at an early age would be to base eligibility for benefits on either a minimum number of years worked or the attainment of a minimum age.

little education or low skill levels tend to be in relatively more arduous occupations than for those with higher educational attainment. Many of these workers could have difficulty continuing to work past 65, therefore, especially if the changes in the occupational mix and skill requirements of the labor force reduce the relative number of unskilled and semiskilled jobs over time. In addition, even though the average number of years of schooling has increased for the labor force as a whole, there is no evidence that this has decreased labor force participation rates for young people.[15]

On the other hand, demographic factors may facilitate the absorption of increased numbers of older workers into the labor force in the future. The population aged 20 to 64 is projected to decline as a proportion of the total population after 2010. This demographic shift may cause the demand for older workers to increase as employers find younger workers increasingly scarce. This could cause wage rates for older workers to rise, which would also encourage many of them to continue working to a later age.[16]

Retirement Income Factors

For many, income is a critical factor in determining whether to continue working. An increase in the age of eligibility for Social Security retirement benefits or a substantial reduction in early retirement benefits would cause such persons to delay retirement. It would also reduce lifetime Social Security benefits, which some economists believe would induce people to work and save more in order to offset the decline in their expected retirement incomes.[17]

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15. Labor force participation rates have in fact increased slightly for men 16-19 years old over the last 20 years, and are about the same level as they were 20 years ago for men 20-24 years old. For women, labor force participation rates have increased significantly in both age categories. See Bureau of Labor Statistics, Handbook of Labor Statistics (December 1980), Table 4, p. 13.

16. Younger workers could also be affected by an increase in the retirement age. The retention by employers of older workers would diminish the opportunities for promotion of younger employees.

17. See Martin Feldstein, "Social Security, Induced Retirement, and Aggregate Capital Accumulation," Journal of Political Economy, vol. 82, no. 5 (September/October 1974), pp. 905-26.

The impact of Social Security changes designed to encourage later retirement would also depend in part on the responses of private pension plans. Many private pension plans now allow workers to receive benefits at earlier ages than does Social Security, and the trend has been toward even lower eligibility ages.[18] Since eligibility for pension benefits is expected to increase considerably in the future, the trend toward lower eligibility ages might work against changes in Social Security rewarding later retirement. If it did, however, it could require major increases in funding for pension benefits. The reason is that many plans have benefit formulas that pay one level of benefits before a worker is eligible for Social Security and a lower level after eligibility, so that an increase in the Social Security retirement age would increase the liabilities for this type of pension fund. The prospect of these increased costs might cause pension plans to reverse the recent trend and delay eligibility ages in a way corresponding to the modifications made in Social Security. If this occurred, the increasing availability of pension benefits would be less likely to offset the effects of an increase in the retirement age.

Workers nearing retirement age in the future may increasingly have access to other sources of retirement income. Recent tax law changes provide substantial incentives for people to save through Individual Retirement Accounts (IRAs) and Keogh plans. While it is still too early to access the impact of these new incentives, some increase in retirement savings through IRAs and Keoghs is likely. Expanded access to this type of investment income in the next century could partially offset the effects of changes in Social Security intended to encourage later retirement.

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18. For a survey of the plans for 240 large corporations, see Bankers Trust Company, Corporate Pension Plan Survey (1980).

CHAPTER VI. ADJUSTING BENEFITS FOR COST-OF-LIVING CHANGES

As recent experience has shown, Social Security balances can fall rapidly in periods when wages rise more slowly than prices. To some extent, this problem results from the fact that trust fund revenues are based on wages, while benefit levels rise with prices because they are adjusted each year to reflect changes in the cost of living. One way to decrease the sensitivity of trust fund balances to economic performance would be to modify the procedure used to adjust benefit levels, so that benefits would not rise faster than wages even in periods of slow wage growth. This chapter outlines several such proposals to change cost-of-living adjustments (COLAs) to provide more stable trust fund balances.

Reductions in cost-of-living adjustments have also been suggested as a partial solution to the short-run financing problem, and they could indeed produce substantial short-run savings (see Appendix C). If benefits were increased by much less than the increase in prices over a long period of time, however, their purchasing power could decline substantially. Further, reductions in COLAs would have a cumulative effect over time, and if maintained over an extended period would cause the purchasing power of benefits to decline further in each year of retirement. Thus, COLA reductions implemented over extended periods could substantially increase poverty rates for older recipients. In addition, both health status and employment opportunities tend to decline with age, making it more difficult for very old recipients to adjust to large declines in their real incomes.

For these reasons, COLA reductions, as distinct from indexing changes designed to promote the financial stability of the trust funds, are not generally proposed as a means of generating long-run cost savings. This chapter concentrates instead on options primarily aimed at decreasing the volatility of trust fund balances. The next section provides some background information on benefit indexation and its effects on the trust funds, and the final section examines options to stabilize trust fund balances over the long run.

AUTOMATIC BENEFIT ADJUSTMENTS: HISTORY AND EFFECTS ON TRUST FUND STABILITY

Automatic indexing of Social Security benefits was legislated as part of the 1972 Social Security amendments, although various indexing schemes

had been proposed before that.[1] Somewhat ironically, a major impetus for the plan was that it was expected to help restrain the growth of benefits. In the seven years preceding the passage of the 1972 amendments, benefits had been raised three times--by 13 percent, 15 percent, and 10 percent--resulting in a cumulative increase of 43 percent between February 1965 and January 1971, over the same period the Consumer Price Index had risen only 27 percent. For this reason many legislators believed that linking benefit increases to the CPI would help keep down Social Security costs. Under the 1972 amendments, the first automatic cost-of-living adjustments became payable with the June 1975 benefits, although an additional benefit increase of 20 percent was also given in September 1972.

The methodology for computing Social Security benefits has not changed since 1975. Under current law, Social Security benefits are indexed to increases in the Consumer Price Index for urban wage earners and clerical workers (CPI-W). The COLA is determined by dividing the average CPI in the first calendar quarter of one year by the corresponding CPI for the previous year. If the increase is more than 3 percent, benefits are adjusted, starting with the payment received in July, to reflect the rise in the CPI.[2]

The purpose of this method of adjusting benefits is to maintain the purchasing power of benefits over time. If benefits were not adjusted as prices rose, their purchasing power would erode and the adequacy of retirement benefits would decline as beneficiaries got older. Because of these adjustments, however, outlays rise as prices go up. Revenues will not necessarily increase by the same amount, since most trust fund income comes from the payroll tax, which is a proportional tax on wages. Prices may rise even in periods of slow wage growth. In periods of slow wage growth, prices may rise faster than wages, causing increases in outlays to exceed increases in revenues, as in 1979-1981. If price increases exceed wage growth over an extended period, total outlays may exceed total revenues, causing trust fund reserves to deteriorate.

Extended periods of slow wage growth can threaten the solvency of the trust funds even in periods when the ratio of wage earners to beneficiaries is relatively high. If no major benefit reductions or tax

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1. For a discussion of efforts to index benefits, see Indexation of Federal Programs, prepared by the Congressional Research Service for the Senate Committee on the Budget, 97 Cong. 1 sess. (May 1981).

2. If the CPI increase is less than 3 percent, then the next year's COLA is based on the price increase over the two-year period.

increases are enacted, for example, and another period comparable to the recent past occurs in the late 1980s or early 1990s, the trust funds could face another financing crisis in spite of the relatively favorable demographic conditions projected for that period.

The estimates presented in this paper assume that the economy will reach long-term trend levels of growth in key variables within the next ten years, and maintain those levels indefinitely. In practice, however, while the economy may on average achieve the assumed rates of growth, its actual year-to-year behavior is likely to continue to vary in a cyclical manner. Such cycles are not built into the assumptions because their occurrence is very difficult to predict, and over the long run the average rate of growth is a more important determinant of trust fund solvency than the variation around that average. Under current law, however, until the trust funds accumulate large reserves, they will continue to be vulnerable to serious financing problems in periods when prices grow rapidly relative to wages.

POLICY OPTIONS

Options intended to increase trust fund stability generally involve linking benefit increases to a measure that will not rise faster than wages, so outlays cannot increase more rapidly than revenues.[3] This section examines three options that would link benefit levels to revenue levels through some form of wage-indexing.

Substitution of a Wage Index

The simplest way to prevent benefit increases from exceeding wage increases would be to base adjustments on a wage index rather than on the CPI. Use of a wage index would maintain the relationship between the incomes received by workers and the level of benefits regardless of changes in prices. Since revenues and benefits would both be linked to wages, such an index would also prevent benefits from rising faster than revenues during periods of poor economic performance.

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3. An alternative would be to stop indexing benefits and return to a system of discretionary benefit adjustments, or a system that required an annual vote on benefit increases, which would allow greater flexibility. Before benefit indexing began, however, such discretionary adjustments generally exceeded price increases.

Over the long run, however, productivity increases have made it possible for wage growth to exceed growth in prices, and such a pattern is expected to hold again in the future. In that case, the long-run costs of wage-indexing benefits would exceed the costs of price-indexing. Under the Alternative II-B assumptions, long-run real wage growth is assumed to be 1.5 percent per year, which would result in additional outlays over the next 75 years of about 2.3 percent of long-run payroll if benefits were wage-indexed rather than price-indexed (see Table 8). In addition, the purchasing power of benefits would fluctuate more than under the present system and, in periods of poor economic performance, the value of benefits could decrease substantially.

Indexing by a Reduced Wage Index

In order to provide the stable trust fund balances that would result from linking both income and outlays to wage growth, without the long-run cost increases that could be expected if benefits were simply indexed by wages, some analysts have proposed using a wage index that has been adjusted downward by the expected long-run differential between wages and prices--1.5 percent, under the Alternative II-B assumptions.[4] Under this proposal, growth in benefits would equal growth in prices over the long run if the real wage increases projected by the Social Security Administration were achieved.

In addition to stabilizing balances, this proposal would keep benefit increases proportional to increases in wages. Periods of low and negative real wage growth impose hardships on workers, and some have argued that those burdens should be shared by retirees. Cost-of-living adjustments for Social Security recipients would be limited in periods of low wage growth, without the increases in Social Security costs that would result from simple wage-indexing.

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4. This is one of the options proposed by the staff of the National Commission on Social Security Reform. The technical aspects of the proposal are still being developed, and the specific percentage by which wages would be reduced to determine annual benefit increases would depend upon the choice of the wage measure. Under the Alternative II-B assumptions, if an hourly earnings index was chosen, the growth rate that would produce no long-run effect on the trust funds would be 1.8 percent rather than 1.5 percent because such an index would rise more rapidly than an annual wage index.

TABLE 8. LONG-RUN SAVINGS OF SEVERAL INDEXING OPTIONS, RELATIVE TO CURRENT LAW (As a percentage of taxable payroll)

Option	Total 1982-2056	Twenty-five-year Periods 1982-2006	2007-2031	2032-2056
Substitution of an Alternative Price Index for the CPI	0	0	0	0
Substitution of a Wage Index for the CPI[a]	-2.3	b	b	b
Indexing by Wage Increases Minus 1.5 Percent				
If implemented immediately	0.09	0.24	0.01	0
If implemented after 1990	0	0	0	0
Indexing by the Lower of Wage or Price Increases[c]	0.43	0.16	0.48	0.65

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration, based on the Alternative II-B assumptions of the 1982 OASDI Trustees Report.

a. Minus signs denote cost.

b. Estimates not available on a 25-year basis.

c. This assumes no "catch-up" provision. A catch-up provision could be enacted to allow benefit increases to exceed price increases during periods of economic recovery, until benefit levels were as high as they would have been under current law. See text for discussion.

On the other hand, more stable trust fund balances would be achieved at the cost of greater fluctuations in benefit levels relative to the cost of living. If wage increases did not exceed price increases by at least 1.5 percent, real benefits would fall. Periods of low or negative real wage growth, like the recent past, would result in substantial real benefit declines. If this proposal had been in effect since 1975, for example, benefit levels would now be about 13 percent lower than under current law. Thus, under this proposal, the risks of poor economic performance would be shifted from the trust funds to beneficiaries.

Indexing by the Lower of Wage or Price Increases

Another alternative to stabilize trust fund balances would be indexing by the lower of wage or price increases. This option would restrict the growth of benefits in periods when prices are growing faster than wages, but would not cause long-run Social Security costs to rise. On the other hand, benefits could decline substantially under this option, both in real terms and in relation to earnings. If periods of real wage growth alternated with periods when increases in prices exceeded those in wages, as in the recent past, benefit increases would not keep up with either prices or wages.

In addition, an index based on the lower of wage or price increases would affect the degree to which Social Security benefits would replace wages lost as a result of an insured worker's retirement, disability, or death. Stabilizing these replacement rates was the guiding principle behind the indexing procedures enacted with the 1977 amendments. For workers retiring at age 65, indexing by the lower of wages or prices would result in lower replacement rates for some retirement cohorts than for others. This difference would depend upon the relationship between wage and price growth between the retiree's sixty-second and sixty-fifth birthdays. Since benefits are initially computed based upon eligibility at age 62 and price-indexed thereafter, an experience similar to 1978-1981 would lower replacement rates as compared to current law by 8 percent for certain retirees.

A "catch-up" provision could also be enacted, allowing, for example, benefit increases that exceeded price increases when the economy was coming out of a recession, until benefit levels were as high as they would have been under price-indexing. Such a provision would avoid large long-term declines in benefit levels, although temporary fluctuations in the purchasing power of benefits would still occur.

There would be little long-run savings if a catch-up was provided, however, and it could have very different effects on those retiring in different years. For example, some proportion of those whose benefits were

reduced during an economic downturn would die before their losses were caught up. In addition, retirees coming onto the system at the beginning of a catch-up period would receive windfall gains, since they would get catch-up increases but would never have experienced any benefit reductions. In order to avoid these overpayments, it would be necessary to compute separate adjustments for those who retired in each different year, which could prove to be an administratively difficult task.

CHAPTER VII. INCREASING TRUST FUND REVENUES

So far, this paper has focused on ways to improve the long-run financial status of the Social Security trust funds by reducing projected Social Security outlays. A second approach to improving trust fund balances would be to increase revenues, either as an alternative or as a supplement to reducing outlays. This chapter briefly describes the sources of Social Security revenues, and then discusses several options for increasing them.[1]

REVENUE SOURCES FOR SOCIAL SECURITY

Almost 98 percent of OASDI revenues in 1981 came from the payroll tax. Increases in the tax rate are scheduled for 1985 and 1990 under current law (see Table 9).

Current Social Security revenues finance current benefits, notwithstanding the fact that workers' entitlements to future Social Security benefits are based on the earnings on which their contributions are assessed. Any excesses of revenues over outlays are accumulated by the trust funds as reserves, and are held in the form of Treasury bonds upon which the trust funds receive interest. Interest payments in 1981 accounted for more than two-thirds of the remaining 2.2 percent of revenues.[2] When outlays exceed income, trust fund reserves are drawn upon to pay benefits.

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1. This chapter assumes that the combined OASDI tax revenues will be allocated between the OASI and DI trust funds so as to meet the obligations of the individual trust funds. Under the Alternative II-B assumptions, the revenues allocated to the OASI fund under current law will not allow it to meet all benefit payments, while the DI fund will build up enormous reserves. The following discussion assumes the Congress will enact, at a minimum, a reallocation of tax rates or an extension of interfund borrowing authority between the OASI and DI funds. Further, the possibility of borrowing from the HI fund is not considered here as an option for the long run because the HI fund is projected to have depleted its reserves by the late 1980s or early 1990s.

2. In addition to payroll tax receipts and interest payments, the OASDHI trust funds also receive a small amount of income from general

TABLE 9. PAYROLL TAX RATES UNDER CURRENT LAW, 1982-1990

	Combined Employer-Employee Taxes OASDI	Employers and Employees, Each		
		OASDI	OASI	DI
1982-1984	10.8	5.4	4.575	0.825
1985-1989	11.4	5.7	4.75	0.95
1990 and Thereafter	12.4	6.2	5.1	1.1
		Self-employed		
		OASDI	OASI	DI
1982-1984	---	8.05	6.8125	1.2375
1985-1989	---	8.55	7.125	1.425
1990 and Thereafter	---	9.3	7.65	1.65

SOURCE: Social Security Bulletin, Annual Statistical Supplement, 1980, p. 35.

NOTE: Payroll tax rates for Hospital Insurance are 1.3 percent in 1982-1984, 1.35 percent in 1985, and 1.45 percent beginning in 1986. Employers, employees, and the self-employed each pay the same rate.

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revenue transfers. These transfers, which provided about $843 million in 1981, or less than 1 percent of income, cover the cost of noncontributory credits for military service and certain very limited types of benefits not based on earnings records, such as the special age 72 benefit received by persons 72 or older who do not qualify for retired worker, spouse, or survivor benefits.

About 90 percent of all workers now hold jobs covered by Social Security. The major exceptions are federal civilian employees and the employees of some state and local governments and nonprofit organizations.[3] For those who are covered, payroll taxes are paid by both employers and employees on wages up to an amount known as the "maximum taxable wage." This amount is increased every year to reflect general wage growth, and in 1982 is $32,400.

POLICY OPTIONS

Options for increasing Social Security revenues fall into four general categories: those that would change the payroll tax rate and earnings base, those that would extend Social Security coverage to workers not now covered, those that would introduce additional sources of tax revenues, and those that would involve transfers from general revenues. All four types are considered in this section. In addition, revenue-side options to enhance the stability of trust fund balances are considered at the end of the chapter.

Payroll Tax Increases

In general, payroll tax increases would mitigate the financial problems of the trust funds while protecting beneficiaries from substantial benefit cuts. In addition, increasing Social Security revenues through increases in payroll taxes would maintain the traditional financing structure of the trust funds. If implemented in the near future, however, payroll tax increases would increase tax burdens on workers at a time when their earnings have been declining relative to benefits, as a result of the price indexing of benefits and the recent declines in real wages. Moreover, the payroll tax, which is a relatively regressive tax, already accounts for an increasing share of total federal revenues; further rate increases would cause its share to grow even faster.[4]

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3. Uniformed military personnel are covered by Social Security. Participation in Social Security is voluntary for state and local governments and nonprofit organizations. Approximately 70 percent of state and local government employees and about 80 percent of employees of nonprofit organizations are now covered by Social Security.

4. The payroll tax for OASI and DI is projected to grow from 22 percent of total federal revenues in 1980 to 25 percent in 1985. If HI payroll tax receipts are included, the projected growth is from 26 percent in 1980 to 31 percent in 1985.

Specific options to increase payroll tax revenues involve either increasing the payroll tax rate or expanding the taxable wage base. One proposed option would be to move the tax increases scheduled for 1985 and 1990 forward to 1984. This would increase long-run revenues by only 0.1 percent of long-run payroll, however.[5]

Alternatively, payroll tax rate increases in addition to those scheduled for 1985 and 1990 could be made after 2010, when outlays are expected to increase substantially. If the entire projected deficit were to be closed through payroll tax rate increases, the combined employer-employee rate would have to be raised from 12.4 percent to about 17 percent in 2035.[6] Alternatively, to achieve about the same reduction in the 75-year deficit as under the options to reduce the formula bend points or to raise the retirement age discussed in Chapters IV and V, payroll tax rates could be increased to 13.5 percent in 2020 and 14.6 percent in 2030. This is one of a number of possible schedules of payroll tax rate increases that would eliminate about one-half of the long-range shortfall in the trust funds.

A general payroll tax increase of this type would reduce the need for benefit reductions to keep the system financially solvent, and would avoid building up much larger reserves than needed in earlier periods if it was not implemented until 2020. It would, however, increase payroll tax rates by two percentage points--a tax increase of almost 18 percent. Such an increase would raise the price of labor and could cause employers to substitute capital for labor where possible, thus reducing employment opportunities. In addition, it could reduce work incentives by lowering net wages.[7]

Additional payroll tax revenues could also be generated by increasing the maximum earnings subject to the payroll tax more than under current law. The maximum taxable wage is $32,400 in 1982, and is currently scheduled to increase each year by the increase in average earnings.

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5. In the short run, however, the impact would be substantial. See Appendix C.

6. Under the pessimistic (Alternative III) assumptions used in the Trustees' Report, the rates would have to be as high as 23.9 percent in 2035 and 28.5 percent in 2060.

7. In general, economists agree that the employees' share of the payroll tax is primarily borne by wage earners. The employers' share, however, may be borne by owners of businesses, or may be shifted to employees in the form of reduced wages or to consumers in the form of higher prices.

Approximately 90 percent of all wages in employment covered by Social Security fall below the maximum earnings limit. If employers were required to pay OASDI taxes on their entire payrolls, as proposed by the Carter Administration in 1977, the projected 75-year deficit would be reduced by about 0.6 percent of taxable payroll.

Eliminating the maximum taxable wage for both employers and employees would improve projected trust fund balances by about 0.8 percent of taxable payroll. The resulting increased receipts would be partially offset by higher future benefits for those with earnings above the current law maximum. The trust funds would experience a net gain, however, because benefits replace a smaller proportion of earnings as average earnings levels rise. Expanding the Social Security tax base by increasing the maximum taxable wage would provide substantial revenue increases, therefore, without directly increasing the tax burden for most workers.[8]

Either of these options would increase the relative tax burden for high-wage earners, however, who already receive a relatively low rate of return on their contributions because of the progressivity of the benefit formula.[9] These options could also encourage employers of high-wage workers to shift a greater proportion of their compensation into untaxed fringe benefits, which would reduce revenue gains.

Extensions of Coverage

One of the most commonly recommended changes would be to extend coverage to some or all of those who are not now covered.[10] If the

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8. Workers would be indirectly affected, however, if the burden of payroll tax increases was shifted to consumers through price increases.

9. The option of increasing the maximum for employers only would only affect high-wage earners if employers were able to shift at least some of its costs to employees through lower net wages.

10. Expansions in coverage were recommended by the 1975 and 1979 Advisory Councils on Social Security, the President's Commission on Pension Policy, and the 1981 National Commission on Social Security. For a comprehensive analysis of the implications of universal coverage, see The Desirability and Feasibility of Social Security Coverage for Employees of Federal, State, and Local Governments and Private Nonprofit Organizations, Report of the Universal Social Security Coverage Study Group, March 1980.

extension of Social Security coverage was limited to new federal employees, new revenues of about 0.3 percent of taxable payroll would be added to the trust fund (see Table 10). This could divert revenues from the Civil Service Retirement fund, however. If all future new employees in jobs not now covered were brought into the Social Security system, its deficit would fall by about 0.5 percent of taxable payroll. If coverage was made mandatory for all current employees in noncovered occupations, as well as for new employees, the net impact would be virtually the same, largely because this extension of coverage would entail increased future benefit payments as well as increased revenues.

Social Security coverage would provide noncovered workers certain benefits that are unavailable from most employers, such as earnings credits regardless of job changes, automatic indexation of past earnings to reflect overall wage growth, tax-exempt treatment of benefits, and benefits for other family members such as spouses and children. These advantages would be offset for some workers by certain disadvantages, however, since many workers in currently noncovered employment have benefits with standards that are less strict than Social Security, such as disability insurance, and are eligible for early retirement before age 62. In addition, some employees in noncovered jobs--for example, civil service workers--are eligible for retirement benefits after a certain age and number of years of service even if they continue to work for other employers than the one providing the pension.

Extending coverage to government employees would also create some administrative problems. Immediate coverage of all current and future federal employees would require integrating Social Security with the Civil Service Retirement System (CSRS), another program that relies heavily on current contributions to fund current benefits. Covering only new federal employees under Social Security and restructuring CSRS to supplement Social Security--as is done with private employer pensions--would facilitate a smooth transition while having the same net impact on the OASDI trust fund deficit over the long run.[11] Mandatory coverage of state and local government employees could encounter constitutional challenges, because under the Constitution the federal government cannot directly tax state and

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11. For examples of how this restructuring could be accomplished and an analysis of its implications for the federal budget, see Congressional Research Service, Restructuring the Civil Service Retirement System: Analysis of Options to Control Costs and Maintain Retirement Income Security (1982). Also see Sylvester J. Schieber, "The Cost and Funding Implications of Modifying the Civil Service Retirement System" (Washington, D.C.: Employee Benefit Research Institute, August 1982).

TABLE 10. LONG-RUN REVENUE INCREASES RELATIVE TO CURRENT LAW UNDER SEVERAL OPTIONS (As a percentage of taxable payroll)

Option	Total, 1982-2056	Twenty-five-year Periods 1982-2006	2007-2031	2032-2056
Payroll Tax Increases				
Move forward 1985, 1986, and 1990 payroll tax increases to 1984	0.09	0.27	0	0
Increase payroll tax rates by 1.1 percent in 2020 and again in 2030[a]	0.94	0	0.62	2.20
Extend coverage to new employees[b]				
Federal workers	0.28	0.21	0.41	0.21
All workers	0.53	0.45	0.76	0.38
Eliminate maximum taxable wage				
Employers only	0.57	0.44	0.58	0.69
Employers and employees	0.83	0.96	0.86	0.67
Other Tax Increases				
Tax one-half of OASI benefits[bc]	0.50	d	d	d

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration.

a. This would increase OASDI rates to 6.75 percent each for employers and employees in 2020, and 7.30 percent each in 2030.
b. Assumes implementation in 1984.
c. If DI benefits were included, the estimated revenue increase would be 0.6 percent of taxable payroll. Estimate is preliminary and subject to revision.
d. Estimate is not available for 25-year periods.

local governments, and some believe that the imposition of the employers' share of the payroll tax on these jurisdictions would constitute such a tax.

On the other hand, mandating Social Security coverage for federal, state, and local employees would eliminate the windfall gains some now experience by working in covered employment for just long enough after retirement from their noncovered government jobs to qualify for Social Security.[12] Retired government employees generally receive a higher rate of return on their Social Security contributions than other workers with comparable annual earnings. This is because Social Security benefits are higher relative to contributions for those with low lifetime earnings, and retired government employees generally have low AIMEs because of their limited time in covered employment.

Increases in Other Taxes

A third type of option for increasing OASDI revenues would be to generate new tax revenues for the trust funds from sources other than the payroll tax. This option would maintain the trust funds as separate entities within the budget, with their own dedicated revenues, although these revenues would no longer be tied exclusively to wages. It would thus reduce the dependence of current benefits on current wages, although presumably workers' future benefit entitlements would continue to be based on their own earnings records. When the "baby boom" generation begins to retire, and the number of beneficiaries grows relative to the number of workers, some revenue source for the trust funds that is not directly dependent on the size of the wage bill may be desirable.

Among options for earmarking additional taxes for OASDI, one that has been frequently proposed is the taxation of all or some portion of Social Security benefits, with the proceeds to be allocated to the trust funds. Employees have already paid income taxes on the contributions they have made to Social Security, but most beneficiaries now receive benefits far in excess of their own contributions. Social Security benefits could be taxed in the same way as private pensions, with no tax being paid until employees have received back their total contributions, and with benefits becoming fully taxable thereafter.[13] Alternatively, for simplicity's sake, beneficiaries

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12. As of 1975, approximately 70 percent of CSRS annuitants either received or were expected to receive Social Security retired-worker benefits, for example.

13. Tax treatment fully comparable to that accorded private pensions would include taxation of accumulated interest on both employee and

could pay taxes on half their benefits, on the theory that half the contributions made in their behalf--those made by their employers--have never been taxed. Most low-income beneficiaries would not be affected under this proposal, since they would still have incomes too low to make them liable for income taxes. Revenue increases could be large: for example, taxing half of OASI benefits could increase long-run revenues by about 0.5 percent of payroll. Further, this option would provide a revenue source linked to the size of benefit outlays, so that in periods when spending for benefits increased, tax revenues would also increase.

In order to provide further protection to low- and moderate-income beneficiaries, benefits could be taxed only for those with total incomes--including one-half of Social Security income--above some specified level. For example, Social Security benefits could receive tax treatment similar to Unemployment Insurance (UI) benefits. Under current law, the portion of UI benefits that, in combination with other income, results in total incomes above $12,000 for individuals and $18,000 for couples is subject to the income tax. The additional tax revenue generated under this option would depend on the minimum income level specified, with higher levels yielding less revenue.

One difficulty is that, if these proposals were implemented without a phase-in period, they would reduce benefits quite sharply and with very little warning for retirees with any substantial source of taxable retirement income. Those with earnings at or near the maximum are more likely than other workers to have such additional income, and this proposal would further reduce rates of return on contributions for such workers, which are already relatively low. Some analysts would therefore favor taxation of benefits only if it was combined with a benefit restructuring that reduced, rather than increased, the progressivity of the system.[14]

Other revenue-generating alternatives that have been proposed include the imposition of increased excise taxes on goods such as alcohol and tobacco, with the resulting revenues earmarked for the trust funds. Federal taxes on alcohol have not been increased since the mid-1950s, although prices have more than doubled over this period, and taxes as a percentage of prices have, therefore, fallen dramatically. Cigarette taxes were doubled

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employer contributions at the time benefits were paid. The Social Security Administration's Office of the Actuary estimates that comparable treatment would result in taxing about 83 percent of benefits for workers now starting to pay taxes.

14. One such proposal is the two-bracket formula suggested by the 1979 Social Security Advisory Council. See the Council's report, pp. 58-63.

this year, but the new revenues were not allocated to the trust funds.[15] Linking alcohol and tobacco taxes to the prices of the goods, rather than to volume as under current law, would cause revenues to keep pace with price increases. Those who favor this option point out that alcohol and tobacco are associated with considerable risks of injury and illness, and argue that persons who voluntarily incur these risks should also bear at least some of the resulting increase in program costs.

On the other hand, the effects of smoking and drinking cannot be linked directly, in most cases, to receipt of benefits. In fact, many people who paid these taxes might never receive benefits. Additionally, opponents argue that increasing taxation of alcohol and tobacco, and not all other products hazardous to health, would be arbitrary.

General Revenue Transfers

Finally, transfers of existing revenues from other parts of the budget to the trust funds constitute a fourth possible option for increasing trust fund revenues.[16] If benefit levels higher than what can be funded through current law trust fund revenues are deemed appropriate, and it is not considered necessary to provide the entire funding of Social Security through earmarked taxes, one possibility would be to transfer to the trust funds whatever is necessary to maintain benefit payments. This would solve the Social Security problem, but could place severe strains on the remainder of the budget. With given targets for the unified budget deficit, this option would mean large tax increases or benefit reductions in other areas of the budget. It would also undermine the concept of a self-financing trust fund for Social Security.

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15. An increase in excise taxes on cigarettes was included in the Tax Equity and Fiscal Responsibility Act of 1982.

16. An additional option for increasing trust fund revenues proposed by Senator Proxmire would be to restructure the investment policies of the trust funds in order to increase the interest income they receive. Reserves are now very low, however, so that even if a relatively large increase in yields was achieved, total interest income would increase very little. Over the longer run, it seems unlikely that the return on investments can be significantly improved because current high real interest rates are unlikely to continue.

A variation on this option would be to allow the trust funds to borrow from general revenues in order to meet benefit payments. In the absence of other measures to increase revenues or cut benefits, however, the projected long-run deficit in the OASDI funds would preclude any substantial repayment of such loans.

A second approach, proposed by the 1979 Advisory Council on Social Security, would be to fund Medicare outlays through some means other than a payroll tax, and to transfer part of the payroll tax now allocated to HI to the OASDI funds. Reallocating the entire HI tax to OASDI would yield additional OASDI revenues that would more than offset the trust fund's projected long-run deficit without requiring reductions in cash benefits. This approach, however, would necessitate funding HI through additional taxes or additional federal borrowing.

Stabilization Measures

The cyclical behavior of the economy can also cause problems for the trust funds. In Chapter VI, ways of determining benefit increases that would mitigate these problems were discussed. Other measures on the revenue side could also help reduce the volatility of trust fund balances. One possibility mentioned earlier in this chapter would be the provision of additional revenues from a tax not directly dependent on wages. Revenues from the taxation of benefits, for example, would rise as benefits rose, and would provide additional trust fund stability in periods when prices rose rapidly relative to wages. Similarly, revenues linked to prices, as through an excise tax, would grow in periods of high inflation. But the effects of options such as these would be limited as long as payroll taxes continued to be the major revenue source for the trust funds.

A second approach would be to allow general revenue transfers or borrowing on a countercyclical basis. One such suggestion, proposed by the Carter Administration, would involve transfers to the trust funds to replace lost payroll taxes when unemployment exceeded 6 percent. An alternative would be to allow transfers or borrowing by the trust funds when prices rose faster than wages, or the trust funds suffered from imbalances in income and outlays for other reasons. The 1981 National Commission on Social Security, for example, proposed that the trust funds be allowed to receive such transfers whenever combined OASDHI outlays exceeded 18 percent of taxable payroll. This proposal could presumably be modified to apply to the OASDI funds alone, with the funds becoming eligible to receive transfers when outlays exceeded, for example, 14 percent of taxable payroll.

Even with benefit cuts or increases in revenues as compared with current law, Social Security reserves are likely to be low in the next 15 years. Under these circumstances, as recent experience has shown, cyclical downturns in the economy can place severe strains on the funds. Allowing some form of general revenue transfers would provide a measure of insurance without shifting the burdens to beneficiaries, as benefit-side stabilization measures would do. On the other hand, while such transfers would presumably be more limited than those that would be necessary to solve the long-term financing problem completely, they would have many of the same drawbacks. In particular, they would impose strains on other areas of the budget, and could also be seen as contrary to the principle of self-financing for the trust funds.

CHAPTER VIII. IMPLICATIONS

So far, this paper has presented a number of different types of options for improving the financial condition of the Social Security system over the long run. Each type of option has been discussed in considerable detail, and the advantages and drawbacks of specific plans have been examined. But the relative effects of different generic approaches--that is, the trade-offs between them--have not yet been addressed. This chapter describes these trade-offs, outlining the relative effects of different types and combinations of options.

Options are compared in the three ways suggested in Chapter II: according to their financial impacts in relation to the projected deficit under current law; according to their timing in relation to the projected needs of the trust funds; and according to their relative effects on the incomes of different groups of beneficiaries and workers. Finally, the chapter considers some ways in which various options might be combined.

IMPACTS OF SELECTED OPTIONS ON THE LONG-RUN DEFICIT

Over the next 75 years, the Old Age and Survivors Insurance and Disability Insurance trust funds are projected to have an average deficit of about 13 percent of outlays, or about 1.82 percent of taxable payroll. The options presented in this paper would have varying effects on the average deficit. None of the options would of itself entirely solve the long-run financing problem. The effects of some of them are summarized in Table 11, which includes examples of each of the major types of benefit reduction and tax increase previously discussed.

The estimates shown in Table 11 are for specific options discussed in the paper. In most cases, greater or lesser impacts could be achieved by increasing or reducing the stringency of an option. For example, the formula bend points could be reduced more or less than under the proposal analyzed here. Similarly, the age of eligibility for full retirement benefits could be raised to 67 or 69, instead of 68, and the various tax proposals could be modified to produce more or less revenue. In general, where more than one version of an option has been widely discussed, an effort has been made to choose a fairly intermediate specification for purposes of analysis.

Most of the options examined here would provide average long-run savings or revenue increases of between 0.5 percent and 1 percent of

TABLE 11. LONG-RUN IMPACT OF SELECTED SOCIAL SECURITY OPTIONS, RELATIVE TO CURRENT LAW (As a percentage of taxable payroll)

Option	Total, 1982-2056	Twenty-five-year Periods 1982-2006	2007-2031	2032-2056
		Surplus or Deficit Under Current Law		
Projected OASDI Surplus or Deficit[a]	-1.82	0.64	-1.68	-4.41
		Savings from Benefit Reductions		
Formula Change				
Change in bend points[b]	0.90	0.26	1.09	1.36
Proportional reduction[c]	0.89	0.25	1.08	1.35
Increase in the Age of Retirement				
Increase in the reduction factor for early retirement[d]	0.71	e	e	e
Increase in the age of eligibility for benefits[f]	1.03	0.12	1.41	1.55
		Revenue from Tax Increases		
Increases in Payroll Tax Rates of 1.1 Percentage Points in 2020 and 2030[g]	0.94	0.00	0.62	2.20
Increase in Coverage				
New federal employees	0.28	0.21	0.41	0.21
All new noncovered workers	0.53	0.45	0.76	0.38
Taxation of One-Half of OASI Benefits[h]	0.50	e	e	e

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration, based on Alternative II-B assumptions.

a. Minus sign denotes deficit.

b. Proposal to index bend points by 75 percent of wage increases for 12 years, starting in 1984.

c. Proposal to reduce percentage of earnings replaced by benefits proportionally in each bracket of formula by about 8 percent over 12 years, beginning in 1984.

d. Administration's May 1981 proposal to reduce benefits for age 62 retirees from 80 percent to 55 percent of full benefits, effective immediately.

e. Twenty-five-year estimates for this option are not available.

f. 1981 National Commission proposal to raise eligibility age by 3 months per year for 12 years, beginning in 2001.

g. Proposal to increase payroll tax rates to 6.75 percent each for employees and employers in 2020, and to 7.30 percent in 2030. Payroll tax rates for the self-employed would be increased commensurately.

h. Estimate is preliminary and subject to revision. Savings are for implementation as of 1984; could also be phased in. If one-half of DI benefits were also taxed, total revenue increases would be 0.6 percent of taxable payroll.

taxable payroll, or about one-fourth to one-half of the long-run deficit under the Alternative II-B assumptions. To eliminate completely the estimated long-run deficit, two or more options of this size would have to be enacted. Another approach would be initially to enact an option or combination of options with a smaller total impact in order to lessen the risks associated with worse-than-projected economic and demographic conditions, with the expectation that additional action could be taken later if it proved to be necessary.

ISSUES OF TIMING

Timing issues are of two major types. The first has to do with the periods when changes in the ratio of workers to beneficiaries may be expected to cause trust fund shortfalls. The timing of trust fund needs, and of options to meet those needs, are discussed in the first two parts of this section. Another kind of timing problem arises from cyclical fluctuations in economic behavior. This problem, and options to stabilize trust fund balances over time, are discussed in the third part of this section.

Timing of Trust Fund Needs

Under the Alternative II-B assumptions, a large buildup in the trust funds is projected during the 20 years between 1995 and 2015, but these reserves are expected to be rapidly depleted as the baby boom generation begins to retire. No deficit is projected, on average, over the next 25 years, although under current law reserves are projected to be less than the amount needed to pay one month's benefits until 1994. Balances thereafter are projected to grow to a peak of about 180 percent of outlays in 2015. A rapid decline is projected over succeeding years until the trust funds become exhausted again sometime between 2025 and 2030.

The economic assumptions underlying this projection are crucial: that the economy will recover in 1982-1983 and will grow at a steady rate of about 3 percent a year over the next decade and about 2-1/2 percent thereafter. If instead the economy did not fully recover until 1984-1985, and then reached an ultimate growth rate of only about 2 percent a year, as under the more pessimistic Alternative III assumptions, Social Security costs would rise steadily as a percentage of taxable payroll until about 1990, when they would reach a plateau of just under 13 percent of payroll, or about 0.5 percentage points higher than trust fund income. They would remain at this level for about 15 years, and then start to rise rapidly again after 2005. Under this set of assumptions, no buildup in trust fund reserves would occur, since outlays would exceed revenues over the entire projection period.

Reductions in benefits or increases in revenues would be needed in the immediate future to maintain the long-run solvency of the system.

Even if economic growth did not prove to be as consistently low as under Alternative III, the trust funds could experience some financing problems in the 1990s and early 21st century if growth over the next 15 years was occasionally less than under the Alternative II-B assumptions, because even under those assumptions balances will be low until after 1995. For example, if another period like the last three years occurred in the mid 1990s, it could endanger trust fund solvency even if the economy had previously followed a growth path like that assumed in Alternative II-B.

Timing of Options

In choosing among options for the long run, therefore, the problems associated with large trust fund buildups must be balanced against the risks of worse-than-projected economic performance. Social Security has been designed as a pay-as-you-go system, and the accumulation of even larger reserves than already projected between 1995 and 2015 would constitute a change in the way the system is funded. In addition, the buildup of very large reserves in the Social Security trust funds could affect the rest of the budget and the economy. If the budget were to be balanced over the 1995 through 2015 periods, for example, the excesses of Social Security income over outlays during this period would mean, on a year-to-year basis, reductions in other taxes or increases in spending--a situation that would be abruptly reversed in the succeeding ten years.[1] In the past, furthermore, the buildup of large trust fund reserves has resulted in ad hoc benefit increases, so that some safeguards against such increases might be necessary if reserves were to be accumulated to offset future trust fund deficits. On the other hand, if the economy did not perform as well as projected under the Alternative II-B assumptions, the projected buildup of trust fund reserves might not occur.

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1. Social Security reserves are held in the form of securities issued by the U.S. Treasury. Thus, while Social Security taxes cannot be spent directly on other programs, additions to the reserves, in effect, take the place of other government borrowing, and in that sense provide additional resources to the budget as a whole. Conversely, the drawing-down of reserves removes resources from the unified budget, and will cause the budget deficit to rise over time unless other taxes or spending reductions are enacted to offset it.

The options discussed here differ considerably in the timing of their effects. Table 11 outlines these effects by 25-year periods. Most of the benefit-reduction options considered in this paper would be phased in gradually, so their major savings would occur 20 or more years from now. Some of the tax-increase options, such as the taxation of benefits or the acceleration of the payroll tax increases scheduled for 1985 and 1990, could be implemented almost immediately; others, such as Social Security coverage for new employees in currently noncovered jobs, would not produce substantial revenues for some years.

The option to increase payroll taxes discussed in Chapter VII and shown in Table 11 was designed to provide additional reserves to the system only as they become necessary under the Alternative II-B assumptions, and therefore would have no effect until 2020. If the risks associated with poor economic performance were felt to outweigh the problems of advance funding, a payroll tax increase that would take effect sooner could of course be designed, although it should be borne in mind that under current law a rise in the combined tax rates, from 11.4 percent to 12.4 percent, is already scheduled for 1990.

Effects of Fluctuations in Economic Performance over Time

In addition to the problems that could be caused by generally worse-than-expected economic conditions, there are, as mentioned earlier, some potential financing problems associated with temporary fluctuations in economic performance. Chapters VI and VII discussed some options aimed primarily at smoothing out these temporary financing difficulties, either by automatically adjusting benefit payments or by increasing revenues through borrowing or transfers to the trust funds when the economy is in recession.

Under current law, benefit payments rise relative to trust fund revenues when wages grow slowly relative to prices. This causes problems for the trust funds but may help to stabilize the economy, since in general Social Security spending will increase and revenues will fall as the economy moves into a recession while the reverse will occur as recovery begins to take place. Thus, the system acts in a countercyclical fashion, adding some stimulus to a declining economy and increasing revenues as the economy recovers.

One type of option for stabilizing trust fund balances would be to link benefit increases to some form of wage index or to the lower of wage and price increases, so that outlays could not rise faster than revenues. This would dampen the effects of temporary economic fluctuations on the trust funds, but would lessen the countercyclical impact of the Social Security

system. If instead the trust funds were allowed to borrow or to receive general revenue transfers in periods of poor economic performance, their countercyclical effects would remain. Since this option would involve some funding for Social Security that did not come from earmarked tax revenues, however, many people feel that it would undermine the concept of trust fund financing for Social Security.

DISTRIBUTIONAL EFFECTS

Options for improving the financial position of the trust funds would also vary in their effects on different groups of workers and beneficiaries. In general, for most types of options there are trade-offs between maintaining the adequacy of retirement incomes for low-income beneficiaries and providing a fair rate of return on contributions for all workers. (These effects are summarized in Table 12.) Thus, options that would have their largest impact on those with high lifetime earnings, such as the proposal to reduce formula bend points or the proposal to eliminate the maximum taxable wage, generally would not reduce benefits for those with low incomes but would reduce the relative rate of return on Social Security taxes paid by high earners. That rate of return will already be lower, under current law, than the return received by lower-income workers, and some high-earning workers' expected Social Security benefits will be lower than their contributions to the system. Further reductions in their rate of return would exacerbate this situation.

On the other hand, reductions that affected all beneficiaries equally, such as a proportional reduction in the benefit formula, would reduce benefits for those with low incomes as well as for those with more resources, and could threaten the adequacy of retirement incomes for some recipients. Increases in the age of retirement could also have that effect, since those who retire early are likely to have both lower lifetime earnings and less access to other sources of retirement incomes than those who continue working. The impact of changes in the retirement age on benefit adequacy could be particularly large for those who have health problems that are not sufficiently severe to qualify them for disability benefits, or who become unemployed relatively late in life.

The trade-offs between income adequacy and provision of a fair rate of return also occur between generations. Current retirees are receiving relatively high rates of return on their Social Security contributions, both because of past benefit increases and because many have not contributed to the system over their entire working lives. Thus, options that focus entirely on those retiring in the fairly distant future would reduce rates of return for beneficiaries who, even under current law, will be receiving lower rates of

TABLE 12. SUMMARY OF DISTRIBUTIONAL EFFECTS OF SELECTED SOCIAL SECURITY OPTIONS, RELATIVE TO CURRENT LAW

Option	Reduces Benefits for Retirees with Low Lifetime Earnings	Reduces Relative Rate of Return for Those with High Lifetime Earnings	Reduces Benefits for Current Retirees or Those Retiring in Near Future	Reduces Rate of Return for Current Workers Relative to Current Retirees
Benefit Reductions				
Formula change				
Change in bend points[a]		X		X
Proportional reduction[b]	X			X
Increase in the age of retirement				
Increase in the reduction factor for early retirement[c]	X		X	
Increase in the age of eligibility for benefits[d]	X			X
Tax Increases				
Increases in payroll tax rates of 1.1 percentage points in 2020 and 2030[e]				X
Taxation of one-half of OASI benefits[f]		X	X	

SOURCE: Congressional Budget Office.

a. Proposal to index bend points by 75 percent of wage increases for 12 years starting in 1984. This proposal would also affect retirees with low lifetime earnings, but generally not as much as the proportional reduction proposal. See discussion in Chapter IV for more details.

b. Proposal to reduce percentage of earnings replaced by benefits proportionally in each bracket of formula by about 8 percent over 12 years starting in 1984.

c. Administration's May 1981 proposal to reduce benefits for age 62 retirees from 80 percent to 55 percent of full benefits, effective immediately.

d. 1981 National Commission proposal to raise eligibility age by 3 months per year for 12 years, beginning in 2001.

e. Proposal to increase payroll tax rates to 6.75 percent each for employees and employers in 2020, and to 7.30 percent in 2030. Payroll tax rates for the self-employed would be increased commensurately.

f. Estimate preliminary and subject to revision. Assumes implementation as of 1984; could also be phased in.

return than those who are now retired. If such options were combined with tax increases affecting current workers, who will become future beneficiaries, rates of return for this group would fall even more. On the other hand, workers in general have higher incomes than beneficiaries, and incomes are projected to grow over time, so reductions affecting current workers or future beneficiaries might have less impact on income adequacy than would reductions in the benefits of current recipients.

Options to stabilize trust fund balances would also be subject to some of the same concerns. If the trust funds were supplemented from general revenues during a recession, the costs associated with poor economic performance would in effect be borne by taxpayers rather than beneficiaries. If benefits were linked to some form of wage index or to the lower of wages or prices, on the other hand, the purchasing power of benefits would decline, reducing their adequacy. During an extended recession, such a plan could significantly increase poverty rates for older Americans.

Stabilization measures that did not maintain the purchasing power of benefits could also introduce inequities between those retiring in different years, since those who retired during a period of recession would have lower real lifetime benefits than those who retired while the economy was performing well. Even if some provision was made to provide additional benefit increases in recovery periods for those whose real benefits had declined, some inequities would remain, since some retirees who had lost benefits would die before their losses were made up. Further, unless separate benefit adjustments were computed for those retiring in each year, workers who retired at the beginning of a "catch-up" period would also experience gains, even though their benefits had never been reduced.

Another set of concerns involves the relative sizes of the groups affected by options of different types. In general, options that are very narrow in their focus--that is, those that affect only very small and specific groups of people--must have a greater impact on those affected than would broader options if they are to generate comparable savings or revenue increases. For example, since there are many more workers than beneficiaries at any given time, options to raise taxes on earnings would generally reduce each worker's net income by less than the reduction that would have to be made in each beneficiary's income to improve trust fund balances by the same total amount. Similarly, options or combinations of options affecting all retirees would be broader in focus than those affecting new recipients only.

In general, this paper considers options focusing on narrowly defined groups only when their purpose would be to treat members of those groups

more like other workers and beneficiaries. Coverage of federal employees and universal coverage are examples of such options, and elimination of the maximum taxable wage might also fall into this category. The partial taxation of Social Security benefits could also reduce some existing discrepancies in treatment, both between retirees with income primarily from Social Security and those with some income from savings or private pensions, and between Social Security recipients in general and non-aged people with similar total incomes.

COMBINATIONS OF OPTIONS

As noted in the first part of this chapter, no single option discussed in this paper could of itself solve the system's projected financing problems. For this reason, it may be desirable to consider some possible combinations of options.

Such a combination would be subject to the same general concerns as apply to the assessment of individual options: the magnitude of the options' combined effects, when these effects would occur, and their combined distributional impact. This section briefly outlines the advantages and drawbacks of three combinations, including a combination of reductions in benefits, a combination of payroll tax increases, and a combination of tax increases and benefit reductions.

Combinations of Benefit Reductions

A combination of options reducing benefits could be designed to produce sufficient total savings to offset the projected trust fund deficit, with some flexibility in timing. Options such as increases in the retirement age that would not take effect for some time could be combined with options such as formula changes that would provide some additional resources in the next two decades, and with options like temporary reductions in cost-of-living adjustments that would address the short-run financing problem. This would provide an additional margin of safety for the trust funds in the relatively near future, while avoiding larger changes in the program until they became necessary.

The impact on beneficiaries of two or more benefit-reduction options in combination could, however, be very large. Table 13 shows, for example, the impact of combining a formula change option with an increase in the age of retirement for workers earning minimum, average, and high wages. By 2020, after full phase-in, either of these two options could mean substantial benefit cuts relative to current law.

TABLE 13. PERCENTAGE REDUCTIONS IN MONTHLY BENEFITS FOR BENEFICIARIES BECOMING 65 IN 2020 WITH LIFETIME EARNINGS AT THREE WAGE LEVELS, UNDER A COMBINATION OF PROPOSALS TO REDUCE BENEFITS

Wage Level	Age at Retirement		
	Age 62	Age 65	Age 68
	Raising Retirement Age[a]		
Minimum Wage[b]	100.0	17.2	6.0
Average Wage[c]	100.0	17.4	6.4
Maximum Wage[d]	100.0	17.1	5.7
	12-Year Restriction on Bend Points[e]		
Minimum Wage[b]	7.7	7.6	7.5
Average Wage[c]	4.8	4.8	4.7
Maximum Wage[d]	8.6	8.5	8.4
	Combination of Raising Retirement Age and Restriction on Bend Points		
Minimum Wage[b]	100.0	23.6	13.2
Average Wage[c]	100.0	21.4	10.9
Maximum Wage[d]	100.0	24.2	13.8

SOURCE: Congressional Budget Office.

a. 1981 National Commission proposal to raise the eligibility age for full benefits to 68 and for reduced benefits to 65, starting in 2001. See Chapter V for details.

b. Calculations are based on the earnings of a full-time minimum wage earner. Minimum wage after 1982 is assumed to increase with growth in average wages.

c. Calculations are based upon the earnings of a worker who earned the average wages in the economy.

d. Calculations are based upon the earnings of a worker who earned the Social Security taxable maximum.

e. Proposal to index bend points in the benefit computation formula by 75 percent of wage increases for 12 years, starting in 1984. See Chapter IV for details.

Combining a benefit formula change with an increase in the age of retirement would result in total benefit reductions that were slightly less than the sum of the reductions under each option, but that were still very large. For a 65-year-old minimum wage earner, for example, the combination of the reduced-bend-point proposal and the raised-retirement-age proposal would result in a benefit cut of about 24 percent relative to current law. For a minimum wage earner who retired at age 68, the combined reduction would still be about 13 percent. Reductions for an average wage worker would be about 21 percent at 65 and about 11 percent at 68, and for a maximum wage earner about the same as for a minimum wage earner. If the proportional-benefit-reduction proposal was substituted for the reduced-bend-point proposal, total reductions would also be about 24 percent at age 65 and 15 percent at age 68.

Payroll Tax Increases

A series of increases in payroll tax rates would constitute one of the few options that could by itself solve the entire projected financing problem. The increases could be phased in as the costs of the system rose. Under the Alternative II-B assumptions, this would require a tax increase from about 12.4 percent to about 14.4 percent in 2020 and further increases after that, to an ultimate rate of about 17 percent.

Solving the trust fund problem in this way would allow revenue increases to be tailored to the projected needs of the trust funds, and would eliminate the need for large-scale benefit reductions relative to current law. If future incomes increased as much as projected, future workers would be relatively well-off compared with the workers and beneficiaries of today, and payroll tax increases of the magnitude that would be needed under the Alternative II-B projections might not impose excessive burdens. Under this option, for example, payroll tax revenues in 2030 would be about one percent more of GNP than in 1985.

On the other hand, delaying action until after 2020 would entail the risk of higher tax increases than if the economy did not perform as well as projected. Under the Alternative III assumptions, for example, a tax rate of about 18 percent in 2020 and an ultimate rate of about 28 percent would be required. In addition, payroll tax increases, even of the magnitude needed under the Alternative II-B assumptions, could have substantial effects on work incentives and on productivity. Since the payroll tax is slightly regressive because of the cap on taxable earnings, and because it only affects earned income, such increases would lessen the overall progressivity of the tax system. They would also reduce rates of return for future workers, while providing no additional margin of safety for the trust funds in the meantime.

Combination of Benefit Reductions and Tax Increases

A combination of benefit reductions and tax increases could achieve a similar total impact on long-run trust fund balances, without as large an impact on either benefit adequacy or future wages. Such a combination could also be designed so that the impact of the changes on those affected would be smaller, at least at any single time. A combination of tax increases and benefit cuts might reduce total lifetime incomes for current workers as much as a large payroll tax increase or a combination of future benefit reductions, by affecting the same people both as workers and as recipients, but since not all of the reductions would take place at one time they might prove less disruptive.

This type of combination could also be used to maintain long-run solvency without building up much larger reserves than under current law in the early 21st century--for example, if a formula change or increase in the age of retirement was combined with a tax increase occurring after 2020. If, on the other hand, an additional margin of safety for the near term was also desired, any of these longer-run options could be combined with benefit reductions or tax increases affecting current beneficiaries, such as temporary reductions in cost-of-living adjustments or the taxation of Social Security benefits. This would have the advantage of avoiding larger decreases in rates of return for future beneficiaries, by reducing the future payroll tax increases or benefit cuts that would be needed. Except to the extent that workers changed their behavior in response to tax increases, the options included in this type of combination generally would not reinforce or offset each other, so the total impact would be approximately equal to the sum of the effects of the individual options, as shown in Table 11.[2]

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2. Savings estimates for specific combinations of options are not generally available.

APPENDIXES

APPENDIX A. EXAMPLE BENEFIT COMPUTATIONS

This appendix presents the benefit computations for hypothetical workers at different earnings levels who are age 62 in 1982. It includes computations both under the procedure enacted in the 1977 amendments and under the transitional guarantee provided within those amendments. The reader should bear in mind that the hypothetical workers are not typical; full-time steady earnings growing at the rates shown in Table A-1 are highly unlikely. The earnings records of actual workers have much greater variability, making determination of the earnings history of the average actual retiree more difficult than in those examples.

Table A-1 contains the earnings histories of three different steady workers: one with annual wages equal to full-time work at the federal minimum wage, one with earnings equal to the economywide average, and one who always earned the Social Security maximum taxable wage. Only earnings after 1950 are considered for use in the computation of benefits under the procedure contained in the 1977 legislation.[1]

Benefit Computation Rules

The 1977 law calls for wages to be indexed to the wage levels prevailing in the year a worker reaches age 60. For a worker turning 62 in 1982, the indexing year is 1980; earnings in 1980 averaged $12,513. Earnings in all years before 1980 are indexed by the ratio of average economywide earnings in 1980 to the average in each of the corresponding years. For example, workers' covered earnings in 1960 are multiplied by $12,513 divided by $4,007, or 3.123. If a worker had earned $3,000 in employment covered by Social Security in 1960, the indexed value would be $9,369. Annual earnings after age 60 are not indexed, but rather are included at their nominal levels.

In order to become eligible for a retired worker's benefit, a retiree must be fully insured for retirement benefits. To be fully insured, a worker must have quarters of Social Security coverage equal to the number of years after 1950 or age 21, whichever is later, and before the year in which age 62

1. In practice, benefits may be computed using pre-1951 earnings, but this method, known as the "old-start" method, rarely results in higher benefits.

TABLE A-1. EARNINGS HISTORIES FOR HYPOTHETICAL WORKERS AGE 62 IN 1982
(Rounded to the nearest dollar)

Year	Nominal Earnings			Indexing Factor	Indexed Earnings		
	Minimum[a]	Average[b]	Maximum[c]		Minimum	Average	Maximum
1951	1,560	2,799	3,600	4.470	6,974	12,513[d]	16,094
1952	1,560	2,973	3,600	4.209	6,565	12,513[d]	15,151
1953	1,560	3,139	3,600	3.986	6,218	12,513[d]	14,349
1954	1,560	3,156	3,600	3.965	6,186	12,513[d]	14,276[d]
1955	1,560	3,301	4,200	3.790	5,913[d]	12,513[d]	15,919
1956	1,993	3,532	4,200	3.543	7,060	12,513	14,879
1957	2,080	3,642	4,200	3.436	7,147	12,513	14,432
1958	2,080	3,674	4,200	3.406	7,085	12,513	14,306
1959	2,080	3,856	4,800	3.245	6,750	12,513	15,578
1960	2,080	4,007	4,800	3.123	6,495	12,513	14,989
1961	2,184	4,087	4,800	3.062	6,687	12,513	14,697
1962	2,392	4,291	4,800	2.916	6,975	12,513	13,997[d]
1963	2,461	4,397	4,800	2.846	7,004	12,513	13,661[d]
1964	2,600	4,576	4,800	2.734	7,109	12,513	13,125[d]
1965	2,600	4,659	4,800	2.686	6,984	12,513	12,893[d]
1966	2,600	4,938	6,600	2.534	6,588	12,513	16,724
1967	2,886	5,213	6,600	2.400	6,927	12,513	15,842
1968	3,293	5,572	7,800	2.246	7,396	12,513	17,518
1969	3,328	5,894	7,800	2.123	7,066	12,513	16,561
1970	3,328	6,186	7,800	2.023	6,732	12,513	15,778
1971	3,328	6,497	7,800	1.926	6,410	12,513	15,023
1972	3,328	7,134	9,000	1.754	5,838[d]	12,513	15,787
1973	3,328	7,580	10,800	1.651	5,494[d]	12,513	17,829
1974	3,883	8,031	13,200	1.558	6,050[d]	12,513	20,568
1975	4,368	8,631	14,100	1.450	6,333	12,513	20,443
1976	4,784	9,226	15,300	1.356	6,488	12,513	20,751
1977	4,784	9,779	16,500	1.280	6,121[d]	12,513	21,113
1978	5,512	10,556	17,700	1.185	6,534	12,513	20,982
1979	6,032	11,479	22,900	1.090	6,575	12,513	24,963
1980	6,448	12,513	25,900	1.000	6,448	12,513	25,900
1981	6,968	13,595	29,700	1.000	6,968	13,595	29,700

a. Full-time worker at the federal minimum wage.

b. Full-time worker with earnings equal to the average in the economy.

c. Worker earning the Social Security taxable maximum wage.

d. Dropout years.

is reached. Therefore, for a worker turning 62 in 1982, 31 quarters of Social Security coverage are required. For those attaining 62 in 1991 or later, 40 quarters of coverage will be required in order to be fully insured.

Before 1978, a worker earned one quarter of coverage for each calendar quarter in which at least $50 of wages was received. Beginning in 1978, each $250 of annual earnings results in one quarter of coverage up to a maximum of four quarters annually. This earnings requirement is automatically increased each year to reflect the growth in overall wage levels.

The number of years of covered earnings that must be included in the benefit computation is five less than the required number of quarters of coverage. These five years are generally referred to as dropout years. The worker age 62 in 1982, therefore, will have benefits based on the highest 26 years of earnings, and by 1991, benefits for workers age 62 will be based on 35 years of earnings.

AIME Computation Method. To compute benefits for workers age 62 in 1982 under the new procedure enacted in 1977, indexed earnings in the highest 26 years must be totaled. A lifelong full-time worker earning the minimum wage, for example, would therefore be able to drop earnings in 1955, 1972, 1973, 1974, and 1977, and would have total indexed earnings of $175,706 (see Table A-1). Dividing this by the number of months in the computation period (26 years x 12 months = 312 months) results in an average indexed monthly earnings (AIME) of $563. The corresponding AIMEs for the average and maximum earners are $1,046 and $1,493.

Earnings after age 62 can increase the AIME if these later earnings exceed the indexed earnings in some previous year. Again, in the example of the minimum-wage worker, full-time earnings in 1982 would amount to $6,968, which is higher than earnings in many years included in computing the AIME. Therefore, the 1982 earnings of $6,968 could be used to replace the lowest of the 26 included years ($6,186 in 1954) used to calculate the AIME. The substitution increases this worker's AIME by $2.51. Although for this example worker the effect of this recomputation is less than a 1 percent increase in AIME, the effect on actual workers is likely to be much greater. For instance, if the worker had only 25 years of earnings in the 1951-1981 period, the 1982 earnings of $6,968 would have replaced a year of $0 earnings in the computation. In that case, the AIME would increase by $22.33 with the recomputation.

Once the AIME has been calculated, it is transformed into the worker's basic benefit or primary insurance amount (PIA) according to a specific formula. For a worker reaching age 62 in 1982, the PIA equals 90 percent of the first $230 of AIME, 32 percent of the next $1,158, and 15 percent of the

AIME above $1,388. Applying this formula to the AIMEs of the three example workers results in PIAs of $314 for the minimum-wage worker, $468 for the average-wage worker, and $593 for the maximum-wage worker.[2]

After the year of initial eligibility (age 62 for retired worker benefits), the PIA is increased each year for the increase in the Consumer Price Index (CPI) measured by the percentage increase from the first quarter of one year to the first quarter of the next. Thus, the PIAs of $314, $468, and $593 would have been for January through May 1982, and would have been increased by the 7.4 percent cost-of-living adjustment that raised the June 1982 benefits (received in July).

The actual benefit payable to the example workers, however, would be less than the PIA. Workers are eligible to receive retired worker benefits at age 62 only after an actuarial reduction. Thus, eligible workers may receive benefits before age 65, but only at reduced levels. For each month that payments are received before age 65, benefits are reduced by five-ninths of 1 percent reaching a maximum of a 20 percent reduction at age 62.

Transition Guarantee. The 1977 amendments changed the method used to compute benefits from the PIA table procedure based upon a worker's average monthly wage (AMW) to the procedure outlined in the preceding section based on the AIME. However, because the new method could have resulted in relatively large benefit reductions for workers very near retirement, the amendments also provided that individuals reaching age 62 between 1979 and 1983 would receive the higher of a transition benefit based on the old-law method or the benefit based on the new-law procedure.[3]

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2. The example minimum-wage worker would have been eligible for a special PIA of $321 in January 1982 because of additional provisions designed to increase benefits for long-term low-wage workers. These provisions, known as the special minimum benefit, allow workers to have benefits calculated on the basis of the number of years of earnings when wages were at least 25 percent of the maximum taxable wage. A worker receives $16.07 per month for each of these years in excess of 10 with the total not to exceed 20. The monthly dollar amounts are increased by the annual benefit increase: 7.4 percent in 1982. Thus, the June 1982 benefit for the example minimum-wage worker would be $345.

3. In fact, the transition guarantee did not prevent the occurrence of major differences between retirement cohorts. The rapid inflation of the 1979-1981 period caused the old-law guarantee to fall substantially

The AMWs for the hypothetical workers analyzed here are computed the same way as the AIME except that actual earnings rather than indexed earnings are used in the calculation. That is, the highest 26 years of earnings (for a worker reaching 62 in 1982) are totaled and then divided by 312.

The formula used to convert AMWs into PIAs was frozen in 1978 for the purposes of the transition guarantee. The formula is as follows: 155.38 percent of the first $110 of AMW, 56.51 percent of the next $290, 52.81 percent of the next $150, 62.09 percent of the next $100, 34.53 percent of the next $100, 28.78 percent of the next $250, 25.92 percent of the next $175, 24.01 percent of the next $100, 22.56 percent of the next $100, and 21.30 percent of the next $100. Applying this formula to the AMWs of the example workers yields PIAs of $273, $418, and $540, respectively, for those earning the minimum, average, and maximum wage.

An important aspect of the transitional guarantee is that workers cannot use earnings after age 61 to increase their AMW and therefore the PIA. Earnings after age 61 may only be used to increase the PIA of workers reaching age 62 between 1979 and 1983 if the new-law formula is used.

Comparison of the PIAs under the new formula and under the transition guarantee indicates that, for the example workers, benefits would be based on the new formula. For some other workers, however, the guarantee would have yielded a higher benefit.

Differences in Benefit Computation for Disabled Workers and Survivors

While the computation of Social Security benefits for disabled workers and survivors is basically the same as for retired workers, there are some differences. These differences relate to the insured status requirements, the number of years of earnings to be included in the computation, the limitation on family maximum benefits, and the limitations on earnings for those receiving benefits.

Insured Status Requirements. In order for survivors to be eligible for benefits, the deceased worker would have had to be either fully insured or currently insured. To meet the fully insured requirement, a worker needs

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in real value. This disparity, often referred to as the "notch problem," is highlighted by the $119 difference between the June 1982 benefits payable to workers born in 1916 and 1917 respectively, both of whom had earned the taxable maximum wage each year since 1951.

one quarter of coverage for each year after 1950 or attainment of 21, whichever is later, and before reaching age 62 or age of death. Alternatively, if the deceased worker earned at least 6 quarters of coverage out of the last 13 calendar quarters preceding death--including the quarter in which death occurred--survivors' benefits are payable to children and to the surviving spouse if caring for a child under 18.[4]

Different insured status requirements also apply for disabled workers. In addition to the requirements for being fully insured, a worker must have earned 20 quarters of coverage out of the last 40 preceding the onset of the disability. If the onset of disability occurs before age 31, the worker must have earned one quarter of coverage for every two elapsing after turning 21 in order to be insured for disability benefits. However, a worker needs a minimum of six quarters of coverage.

Computation Period. The year in which eligibility benefits begins is determined by the year when a worker turns 62, becomes disabled, or dies. For example, if a worker became disabled at age 50 in 1982, the number of years of earnings considered for determining benefits is 1982 minus 1954 (the year in which age 22 was attained), or 28. The lowest five years of earnings are dropped from the benefit computation, resulting in an averaging period of 23 years. The determination of the averaging period for a worker dying in 1982 would be identical.

Disabled workers under 47 are allowed fewer dropout years than other workers. Under the 1980 amendments, the number of dropout years for disabled workers is related to the age of eligibility, as shown below:

Age at Onset of Disability	Dropout Years
Under 27	0
27-31	1
32-36	2
37-41	3
42-46	4
Over 46	5

Earnings are indexed in the same manner as for retired workers, with average annual earnings in the economy two years prior to eligibility

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4. After 1983, only surviving spouses with children under 16 will be eligible to receive survivors' benefits prior to age 60 when they become eligible for widows' or widowers' benefits.

serving as the base. In addition, the same PIA formula is used for anyone becoming eligible in a given year.

Limitation on Family Maximum Benefits. The maximum benefit payable to a family of a disabled worker based upon the worker's PIA is different from that for retirement and survivor families. Under the 1980 amendments, the maximum family disability benefit is equal to 85 percent of the AIME or 150 percent of the PIA, whichever is lower but not less than the PIA. The stricter limit for disability benefits is designed to provide family benefits that are less likely to exceed the worker's predisability earnings than was the situation prior to the amendments.

Limitations on Earnings. Benefits payable to survivors are reduced for earnings in the same way as they are for retired workers and their spouses. In 1982 the exempt earnings amount for survivors 65 and over is $6,000, and for those under 65 it is $4,440. For every two dollars of earnings above the exempt amount, benefits are reduced by one dollar.

For disabled workers, a different earnings limit applies. In order to qualify for disability benefits, monthly earnings must not exceed $300 a month in 1982. For those already receiving benefits, continued earnings near or above this level lead to a complete termination of benefits.

Benefits Payable to Other Persons Based on the Worker's PIA

Other persons besides the insured worker may receive Social Security benefits based on a worker's earnings record. These include the worker's spouse, minor children, and survivors. Benefits payable to persons other than the insured worker are often referred to as dependents' benefits, although no proof of dependency is required. They are also known as auxiliary benefits. Auxiliary benefits are generally some percentage of the insured worker's PIA. For example, a spouse aged 65 is eligible, if the insured worker applies for and is awarded benefits, for 50 percent of the worker's PIA. Table A-2 lists the benefits for auxiliary beneficiaries as a percentage of the worker's PIA.

TABLE A-2. MONTHLY AUXILIARY BENEFITS AS A PERCENTAGE OF THE WORKER'S PRIMARY INSURANCE AMOUNT FOR SELECTED BENEFICIARIES

Type of Benefit	Percent of PIA
Based on PIA of Retired Worker[a]	
Spouse[b]	
Age 65	50.0
Age 62	37.5
If caring for child under 18[c]	50.0
Children and dependent grandchildren	50.0
Based on PIA of Disabled Worker[a]	
Spouse[b]	
Age 65	50.0
Age 62	37.5
If caring for child under 18[c]	50.0
Children and dependent grandchildren	50.0
Based on PIA of Deceased Worker[a]	
Widows and widowers[b]	
Age 65[d]	100.0
Age 60	71.5
Age 50 (only if disabled)	50.0
Widows and widowers with care of child[b,c]	75.0
Dependent parent, age 62[e]	82.5
Children	75.0

NOTE: For a more detailed list, see Social Security Bulletin: Annual Statistical Supplement, 1980, pp. 26-28.

a. Actual benefits subject to the maximum family benefit limitation and the beneficiary's earnings.

b. Includes divorced spouse if the marriage lasted at least ten years.

c. Public Law 97-35, the Omnibus Reconciliation Act of 1981, amended the Social Security Act to eliminate payments to a parent caring for a child when the youngest child reaches age 16. Provision will be fully effective in September 1983.

d. Actual benefits generally cannot exceed those the deceased worker would be receiving if still alive, with some exceptions.

e. If both parents receive benefits, benefits are limited to 75 percent of PIA for each.

APPENDIX B. LONG-RANGE COST PROJECTIONS

Each year the trustees of the Old-Age, Survivors, and Disability Insurance programs are required to report to the Congress on the operations and financial outlook of the Social Security trust funds. The Social Security Act (Sec. 201(c)) specifically requires that the Trustees' Report "include a statement of the assets of, and the disbursements made from, the trust funds during the preceding fiscal year, an estimate of the expected income to, and disbursements to be made from, the trust funds during each of the next ensuing five fiscal years, and a statement of the actuarial status of the trust funds." Currently, the actuarial status is assessed based on the projected operations of the trust funds over the ensuing 75 years. While projections are always uncertain and the uncertainty grows with the length of the projection period, the 75-year estimates are designed to inform the Congress of the potential need for legislative action. Also, as a reflection of the uncertainty, three different sets of assumptions (optimistic, intermediate, and pessimistic) are employed in the estimates of actuarial status to provide a range of possible future outcomes.[1]

This appendix presents a brief overview of the basic methodology used by the Office of the Actuary of the Social Security Administration to estimate program costs. It first describes the demographic and economic assumptions used by the actuaries with heavy emphasis placed on the intermediate B assumptions. The second section of this appendix summarizes how these assumptions are translated into taxable payroll--the traditional measure for evaluating Social Security costs. Next, the appendix discusses the procedure used to produce earnings histories of future beneficiaries and, thus, future benefits.

Demographic and Economic Assumptions

The 1982 Trustees' Report employs three sets of demographic assumptions and four sets of economic assumptions. The various sets of assumptions are constructed to describe circumstances representing a reasonable range of outlooks for the trust funds. Thus, optimistic, intermediate, and pessimistic demographic assumptions are combined with

1. The 1981 and 1982 Trustees' Reports contained a fourth set of economic assumptions based on the Administration's budget assumptions.

optimistic, intermediate (two sets), and pessimistic economic assumptions to provide four basic scenarios.

Demographic Assumptions. Projections of Social Security costs are highly sensitive to factors such as rates of fertility, mortality, and disability incidence. In addition, other factors (such as rates of immigration, marriage, and divorce) are important to the estimates of the composition of the working-age and beneficiary populations.

Table B-1 contains the trustees' assumptions regarding selected demographic factors. For each set of assumptions, the level of net immigration is assigned a limit of 400,000 per year.

As indicated in Table B-1, the ultimate rates for total fertility vary from 2.4 in the optimistic scenario to 1.7 in the pessimistic one, with the intermediate assumptions containing a 2.1 rate. Such differences can substantially affect program costs, particularly during the later portion of the projection period.[2] For example, if the ultimate total fertility rate proved to be 2.0 rather than 2.1 and all other assumptions were realized, OASDI costs as a percentage of taxable payroll would be 0.27 percent higher on average for the next 75 years, but in the period 2032 to 2056 costs would increase by 0.65 percent of taxable payroll.

Mortality rates, which declined rapidly during the 1970s, are expected to continue to decrease, but the trustees foresee a slowdown in the rate of decrease. The life-expectancy projections shown in Table B-1 assume mortality improvements from 1978 to 2060 of 22 percent (optimistic), 37 percent (intermediate), and 59 percent (pessimistic).[3] The intermediate rate is roughly equivalent to a rate of mortality improvement half that which has already occurred in this century. The impact of the mortality rate can be substantial; for example, the cost increases by 1.46 percent of taxable payroll when the 59 percent improvement in the pessimistic projections is substituted for the 37 percent rate in the intermediate projections.

Economic Assumptions. The financial condition of the Social Security system is highly variable depending upon the performance of the economy. Most important among the economic factors affecting program costs is the

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2. See 1982 Trustees' Report, Appendix B, for an analysis of the sensitivity of projected OASDI costs to changes in assumptions.

3. The reader is again reminded that the terms pessimistic and optimistic refer only to the effect of various assumptions on trust fund balances.

TABLE B-1. SELECTED DEMOGRAPHIC ASSUMPTIONS BY ALTERNATIVE, 1960-2060

Calendar Year	Total Fertility Rate[a]	Life Expectancy[b] At birth		Life Expectancy[b] At age 65	
		Male	Female	Male	Female
		Past Experience			
1960	3.61	66.7	73.4	13.0	16.1
1965	2.88	66.8	74.1	13.0	16.6
1970	2.43	67.1	74.9	13.2	17.2
1975	1.77	68.7	76.5	13.7	18.1
1980	1.84	69.8	77.7	14.3	18.7
		Optimistic			
1985	1.96	70.4	78.3	14.5	19.1
1990	2.07	70.9	78.9	14.8	19.4
1995	2.18	71.2	79.2	14.9	19.7
2000	2.29	71.4	79.4	15.0	19.8
2005	2.40	71.5	79.5	15.1	19.9
2010	2.40	71.6	79.6	15.2	20.0
2020	2.40	71.8	79.9	15.3	20.2
2030	2.40	72.0	80.1	15.5	20.4
2040	2.40	72.2	80.3	15.6	20.6
2050	2.40	72.4	80.6	15.7	20.8
2060	2.40	72.6	80.8	15.9	21.0
		Intermediate			
1985	1.90	71.0	78.9	14.8	19.5
1990	1.95	71.9	80.0	15.3	20.3
1995	2.00	72.6	80.8	15.6	20.8
2000	2.05	72.9	81.1	15.8	21.1
2005	2.10	73.2	81.4	16.0	21.4
2010	2.10	73.4	81.6	16.1	21.6
2020	2.10	73.8	82.1	16.4	22.0
2030	2.10	74.2	82.6	16.7	22.4
2040	2.10	74.6	83.1	17.0	22.8
2050	2.10	75.0	83.6	17.3	23.2
2060	2.10	75.4	84.1	17.6	23.6
		Pessimistic			
1985	1.82	72.1	80.2	15.3	20.4
1990	1.79	74.0	82.5	16.3	22.1
1995	1.76	75.3	84.1	17.0	23.5
2000	1.73	75.9	84.9	17.4	24.2
2005	1.70	76.4	85.5	17.8	24.7
2010	1.70	76.8	86.0	18.1	25.1
2020	1.70	77.7	87.2	18.8	26.1
2030	1.70	78.5	88.3	19.5	27.2
2040	1.70	79.4	89.5	20.1	28.2
2050	1.70	80.2	90.6	20.8	29.3
2060	1.70	81.0	91.8	21.5	30.4

a. The total fertility rate for any year is the average number of children who would be born to a woman in her lifetime if she experienced the birth rates by age observed in, or assumed for, the selected year, and if she survived the entire child-bearing period.

b. The life expectancy for any year is the average number of years of life that would remain to a person if that person experienced the death rates by age assumed for the selected year.

rate of growth in productivity and in real wages. Assumptions about unemployment, labor force participation, interest rates, and price growth also influence projected OASDI costs.

Four sets of economic assumptions are used in the 1982 Trustees' Report. Because the long-range cost estimates in this paper are based on the Alternative II-B assumptions, Table B-2 presents the complete set of assumptions for this alternative only. Also shown, however, are the economic assumptions for the other alternatives for the year 2000 and beyond.

Because revenues to the OASDI trust funds are derived from a payroll tax, and benefits, after initial eligibility, are price indexed, the difference between the growth in nominal wages and the growth in the price level largely determines the payroll tax required to support future benefits payable under current law. If this real wage differential was 2.0 percent (as in the intermediate A assumptions) as opposed to 1.5 (as in the intermediate B assumptions), the average annual cost rate over the 1982-2056 period would fall by 0.77 percent of taxable payroll. The compounded effect of this real wage differential is demonstrated by the 0.39 percentage-point reduction for the first 25 years compared with the 1.08 reduction for the last 25 years of the 75-year projection period.

Estimation of Taxable Payroll

Taxable payroll--wages in covered employment that fall below the taxable maximum--is an important concept for understanding Social Security costs. Evaluating program costs as a percentage of taxable payroll facilitates comparison of the impact of different program changes in terms of the changes in the payroll tax rate required to finance them. Thus, the 75-year average deficit of 1.82 percent of taxable payroll indicates that a corresponding increase in the combined employee-employer rate would bring the program into balance on average, although the trust funds would experience large surpluses in some years and large deficits in others.

The Office of the Actuary of the Social Security Administration constructs its estimates of taxable payroll in the following manner. First, the assumptions decided upon by the trustees are used as constraints on the population and the performance of the economy. Estimates of the economy's performance for the near term are derived from the large-scale macroeconomic model maintained by the Social Security Administration's Office of Research and Statistics. These projections are used for the first ten years of the 75-year projection period. Assumptions about the growth rates for GNP, labor force size, prices, and other economic variables for the

near term are fed into the model and a distribution of earnings is generated by the model. The economy is assumed to follow a noncyclical growth pattern that, after ten years, attains the ultimate long-run growth rates contained in the long-run assumptions. For example, by 1992 under the intermediate B assumptions, the real wage differential equals 1.5 percent, productivity growth is 2.2 percent, unemployment is 5 percent, and the Consumer Price Index is rising at 4 percent per year.

Taxable payroll is determined by applying Social Security coverage rates on the labor force and by imposing the taxable maximum earnings limitation on the distribution of wages and salaries in the economy. In addition, separate estimates are made for the taxable earnings of the self-employed. After the initial ten-year period, taxable payroll is projected based upon the assumed growth in nominal covered wages and in the size of the labor force.

Taxable payroll under the trustees' assumptions grows less rapidly than productivity for two basic reasons. First, hours worked per year are expected to continue to decline as they have historically, at a rate of 0.3 percent annually. Second, fringe benefits as a proportion of total labor compensation are projected to continue to grow.[4] Since payroll taxes are based on money wages, these trends result in a payroll tax base that is a declining portion of GNP. GNP is projected by taking the estimate of taxable payroll and, using relationships between the real wage differential and productivity growth, translating the real growth in taxable payroll into the real growth in potential GNP.[5] It is assumed that GNP under each set of assumptions will grow, after 1991, at the same rate as potential GNP.

Projection of OASDI Costs

The costs of the OASDI programs are projected using a weighted sample of current beneficiaries and workers designed to represent the

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4. See Yung-Ping Chen, "The Growth of Fringe Benefits Implications for Social Security," Monthly Labor Review, November 1981, pp. 3-10; and John C. Wilkin, Ronald V. Gresch, and Milton P. Glanz, "Growth in Fringe Benefits," Actuarial Note Number 113, Social Security Administration, June 1982.

5. For a more detailed description, refer to Harry J. Kingerski, "Projecting OASDI Long-Range Program Cost as a Percentage of Gross National Product," Actuarial Note Number 99, Social Security Administration, January 1980.

TABLE B-2. SELECTED ECONOMIC ASSUMPTIONS, 1960-2060

Calendar Year	Average Annual Percentage Increase in: Real GNP[a]	Average wages in covered employment	Consumer Price Index	Real-wage Differential[b] (percent)	Average Annual Interest Rate[c] (percent)	Average Annual Unemployment Rate[d] (percent)
			Past Experience			
1960-1964	4.0	3.4	1.3	2.1	3.7	5.7
1965-1969	4.4	5.4	3.4	2.0	5.2	3.8
1970	-0.2	4.9	5.9	-1.0	7.3	4.9
1971	3.4	4.9	4.3	0.6	6.0	5.9
1972	5.7	7.3	3.3	4.0	5.9	5.6
1973	5.8	6.9	6.2	0.7	6.6	4.9
1974	-0.6	7.4	11.0	-3.6	7.5	5.6
1975	-1.1	6.6	9.1	-2.5	7.4	8.5
1976	5.4	8.2[e]	5.7	2.5[e]	7.1	7.7
1977	5.5	8.0[e]	6.5	1.5[e]	7.1	7.0
1978	4.8	8.2[e]	7.6	0.6[e]	8.2	6.0
1979	3.2	8.8[e]	11.4	-2.6[e]	9.1	5.8
1980	-0.2	8.6[e]	13.5	-4.9[e]	11.0	7.1
			Intermediate B			
1981	1.8[f]	8.6	10.3	-1.7	13.3	7.6
1982	-0.8	6.6	6.9	-0.3	13.0	9.1
1983	4.2	8.1	7.9	0.2	11.4	8.5
1984	3.3	8.1	7.4	0.7	9.3	8.0
1985	3.0	6.9	6.6	0.3	8.0	7.7
1986	3.0	6.8	5.8	1.0	7.1	7.4
1987	3.0	6.6	5.5	1.1	6.8	7.1
1988	3.0	6.6	5.3	1.3	6.6	6.8
1989	3.0	6.4	4.9	1.5	6.5	6.4
1990	3.0	6.0	4.5	1.5	6.4	6.1
1995	2.5	5.5	4.0	1.5	6.1	5.0
2000 & Later	2.6[g]	5.5	4.0	1.5	6.1	5.0

(Continued)

TABLE B-2. (Continued)

Calendar Year	Average Annual Percentage Increase in: Real GNP[a]	Average wages in covered employment	Consumer Price Index	Real-Wage Differential[b] (percent)	Average Annual Interest Rate[c] (percent)	Average Annual Unemployment Rate[d] (percent)
			Optimistic			
2000 & Later	3.5[g]	4.5	2.0	2.5	5.1	4.0
			Intermediate A			
2000 & Later	3.1[g]	5.0	3.0	2.0	5.6	5.0
			Pessimistic			
2000 & Later	2.1[g]	6.0	5.0	1.0	6.6	6.0

a. Real GNP is the total output of goods and services expressed in constant dollars.

b. The difference between the percentage increase in average annual wages in covered employment and the percentage increase in the average annual CPI.

c. The average of the interest rates determined in each of the 12 months of the year for special public-debt obligations issuable to the trust funds.

d. Adjusted by age and sex based on the total labor force aged 16 and over as of July 1, 1970. Rates shown for earlier years are civilian unemployment rates for those years.

e. Preliminary.

f. The actual value of the 1981 increase in real GNP was 2.0 percent. This value was not available at the time the cost estimates were prepared; the cost estimates were based on the assumed increases in real GNP shown under the four alternatives.

g. This value is for the year 2000. The annual percentage increase in real GNP is assumed to continue to change after 2000 under each alternative to reflect the dependence of labor force growth on the size and age-sex distribution of the population. The percentage increases for 2060 are 3.4, 2.5, 2.1, and 1.0 for alternatives I, II-A, II-B, and III, respectively.

population of beneficiaries over the next 75 years.[6] Separate projections of numbers of beneficiaries and average benefits for each type of beneficiary are made. Although expenditures are made for program administration, vocational rehabilitation, and transfers to the railroad retirement fund, benefit payments represent more than 97 percent of all OASDI outlays. Therefore, this section concentrates on the estimate of benefit payments.

In order to project the benefits of future cohorts of recipients, earnings histories must also be projected. Under the current practice of the Office of the Actuary, these projections are based primarily on the earnings histories of individuals becoming eligible for benefits in 1977. These data are selected from the Continuous Work History Sample (CWHS), which contains the records of 1 percent of all persons ever awarded a Social Security number. The file used by the actuaries reduces this number of records by taking a 7 percent subsample. The result of the sampling is a data file containing 1,378 beneficiaries, including retired workers, disabled workers, and survivors. This basic file is further supplemented with records from the CPS-IRS-SSA Exact Match file in order to take into account the possibility that the composition of the beneficiary population could change. For this purpose, 200 records of uninsured workers, primarily women, were added to the file. Finally, to reflect the fact that some people never work, over 100 records of hypothetical persons age 62 were included. The file, therefore, contains 1,689 individual records.

Cost estimates for OASDI require that files comparable to that described above must be projected into the future. In fact, files are constructed for each year through 1990, and quinquennially for the remainder of the 75-year projection period. Through the year 2000, certain assumptions are used to yield reasonable earnings histories. In 1977, the yearly earnings records for the sample span only the 1951-1977 period; for an age-65 retiree this would have represented only earnings from age 39 forward. After adjusting for the bias caused by the taxable maximum earnings limit, the earnings records are expanded to cover the years 1951-2000 by duplicating randomly selected years of earnings. These earnings paths reflect the actuaries' assumptions about age-sex specific labor force participation rates and the observed growth in earnings at younger ages. After 2000, the earnings for the sample are increased to reflect the assumptions about the growth in average wages.

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6. This discussion relies heavily upon a more complete description of the methodology contained in Steven F. McKay, "Long-Range Projection of Average Benefits Under OASDI," Actuarial Note Number 108, Social Security Administration, September 1981.

Once the earnings histories have been developed, OASDI program criteria are applied to each sample member in order to simulate a benefit. First, insured status is determined and, if the worker is insured, benefits are calculated on the basis of the highest primary insurance amount for which the person is eligible. A weighted average of the PIAs is computed for retired and disabled workers, both male and female. Average awards are computed for each cohort, and average benefits are the aggregates of the cohort-weighted average awards reflecting benefit increases, mortality experience, and earnings after retirement.

Auxiliary benefits must also be projected. Their levels are assumed to increase at the same rate as the primary benefit amounts. There are, however, adjustments for the benefits payable under the category of dually entitled, most often wives of retired workers who are eligible for higher benefits as spouses than as retired workers.

Once benefits have been projected in the above manner, total benefits for each type of beneficiary are calculated by multiplying the average benefit by the projected number of beneficiaries. Total benefit payments are simply a sum of the components. Total benefits are then added to the projection of other types of OASDI outlays. These totals are then divided by total projected taxable payroll to arrive at OASDI cost rates.

APPENDIX C. SHORT-TERM FINANCING PROBLEMS AND OPTIONS

The Social Security system faces significant financing problems over the next several years. Under current law, the Old Age and Survivors Insurance (OASI) trust fund, which provides benefits for retirees and their families and for the survivors of deceased workers, will be unable to meet all of its benefit obligations on time in July 1983. Moreover, even if the Congress should decide to extend the authority of the OASI fund to borrow from the Disability Insurance (DI) and Hospital Insurance (HI) trust funds beyond its current expiration date of December 31, 1982, the combined assets of the three funds are projected to fall to levels too low to ensure timely benefit payments sometime during 1984.[1]

This appendix briefly describes the short-run problems of the Social Security system and presents some options that would mitigate those problems. The first section outlines the recent history of Social Security financing. The second section contains projections of the financial operations of the trust funds over the next ten years. The final section examines options for dealing with the short-run financing problem, through either benefit reductions or revenue increases.

RECENT EXPERIENCE OF THE TRUST FUNDS

In each year since 1975, total outlays from the OASI and DI trust funds combined have exceeded their combined income, causing OASDI balances to decline from $45.9 billion at the beginning of 1975 to $24.5 billion at the start of 1982. Trust fund balances at the start of the year as a percentage of total outlays in that year have fallen even more dramatically--from 66 percent in 1975 to 15 percent in 1982 (see Table C-1). While trust fund balances are somewhat higher if the HI fund is included in the comparison, the same pattern of declining reserves is evident: start-of-year balances in the combined OASDHI funds fell from 69 percent of outlays in 1975 to 22 percent in 1982.

The major cause of the rapid depletion of trust fund balances has been the relatively poor performance of the economy over the past decade. In

1. In fact, under the pessimistic assumptions of the 1982 Trustees' report, the combined reserves of the three funds would become too low in 1983.

TABLE C-1. TRUST FUND ASSETS AT THE BEGINNING OF THE YEAR AS A PERCENTAGE OF ANNUAL OUTLAYS, 1972-1982

Year	OASI	DI	HI	OASI AND DI COMBINED	OASI, DI, AND HI COMBINED
1972	88	140	47	93	87
1973	75	125	40	80	76
1974	68	110	69	73	73
1975	63	92	79	66	69
1976	54	71	77	57	60
1977	47	48	66	47	50
1978	39	26	57	37	40
1979	30	30	54	30	34
1980	23	35	52	25	29
1981	18	21	45	18	23
1982[a]	15	16	52	15	22

SOURCE: David Koitz, "A Summary of the 1982 Trustees' Report and Supplementary Historical Information", Congressional Research Service, Report no. 82-75 EPW, April 1982.

a. Ratios for 1982 based on outlays projected by the Congressional Budget Office.

particular, wages have grown more slowly than prices over the period. This has reduced Social Security balances, because the major source of trust fund revenue is the Social Security tax--a tax on wages--whereas benefits are adjusted for changes in the cost of living, and rise when prices rise. As a result, payroll tax revenues have increased less than outlays for

benefit payments.[2] Further, Medicare outlays have increased even faster than OASDI outlays, largely because hospital costs have risen much faster than the overall Consumer Price Index (CPI).

Much of the recent decline in trust fund balances has occurred as a result of benefit increases arising from the automatic price-indexing of Social Security benefits that has taken place since 1975. Many analysts believe that benefits have been overindexed, both because of a now-corrected flaw in the original indexing method, and because of technical problems with the CPI. The CPI, on which benefit increases are based, gives excessive weight to mortgage interest rates and housing prices, which have risen more rapidly than other prices in the recent past.

If cost-of-living adjustments had been computed using an index that included a rental-equivalent measure of housing costs--as the revised CPI will, starting in 1985--benefits would have risen about 83 percent on a cumulative basis between 1975 and 1982, rather than the 94.4 percent they actually rose (see Table C-2). Benefit levels would have been about 6 percent less than they are now. The outcome would have been similar if an hourly wage index had been used: the cumulative increase since 1975 would have been about 84 percent, and benefits would have been about 5 percent lower than they are now.

SHORT-RUN OUTLOOK

As mentioned earlier, Social Security balances are now very low, and the financing problems are expected to worsen in the near future. If the Congress had not enacted legislation (P.L. 97-123) that permitted the OASI fund to borrow from the DI and HI funds, OASI benefit payments could not have been made on time beginning in November 1982. This interfund borrowing authority expires December 31, 1982, at which time the OASI fund may only borrow enough reserves from the other two funds to ensure the payment of six additional months of benefits. If the borrowing authority is not extended and nothing is done either to increase OASI revenues or to decrease OASI outlays by July 1983, the OASI fund will be unable to pay July benefits on time.

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2. There are, of course, many other factors that affect the growth of revenues and outlays. For example, on the revenue side, payroll tax rates, the maximum taxable wage, and the size of the labor force all increased during the last ten years. On the expenditure side, the OASDI beneficiary population grew by about 15 percent from 1975 to 1982.

TABLE C-2. COMPARISON OF ANNUAL BENEFIT INCREASES BASED ON ALTERNATIVE INDEXES, 1975-1982 (In percent)

Year	Based on Present CPI	Based on Rental Equivalent CPI	Based on Hourly Earnings Index
1975	8.0[a]	7.0[a]	7.1[a]
1976	6.4	6.2	7.9
1977	5.9	5.9	7.1
1978	6.5	6.1	8.1
1979	9.9	8.6	7.2
1980	14.3	11.6	8.4
1981	11.2	10.3	9.8
1982	7.4	7.2	7.8
Cumulative Increase 1975-1982	94.4	83.0	84.0

SOURCE: Congressional Budget Office. CPI-based COLAs from Benjamin Bridges and John Hambor, "The New CPI and the Cost of Living Increases for OASDI and SSI," Social Security Bulletin, August 1982. COLAs based on the earnings index computed using Bureau of Labor Statistics estimates, as published in the Monthly Labor Review, various issues.

a. Based upon increase in index from the second quarter of 1974 to the first quarter of 1975.

Even if the Congress were to amend the Social Security Act to extend interfund borrowing authority beyond its expiration date, however, the combined reserves of the OASI, DI, and HI funds are projected to decline to levels too low to ensure timely payment of all benefits during calendar year 1984. As shown in Table C-3, the projected reserves of the three trust funds combined will amount to 13 percent of annual outlays at the beginning of fiscal year 1984, and to about 7 percent at the beginning of fiscal year 1985.

The combined funds will continue to decline after 1985, and while OASDI balances are projected to recover after 1990, HI outlays are projected to exceed revenues from 1987 on. Since cash benefits payments are all made at one time early in each month, whereas tax payments are received continuously during the month, OASDI balances equal to a whole month's outlays--roughly 9 to 12 percent of annual outlays--must be on hand at the beginning of each month.[3] The required balances for the HI fund may be somewhat lower because outlays occur throughout the month rather than all on one day.

In order to maintain reserves equal to 12 percent of fiscal year outlays, for example, the three combined funds would need $12 billion in added revenues or outlay reductions in fiscal year 1984, and $6 billion more in 1985.[4] In addition, the trust funds would continue to incur deficits throughout the 1980s, as Table C-3 shows. These sums would be necessary in addition to the recently enacted changes in the HI program, which are expected to add a total of $16.3 billion to HI balances during fiscal years 1983-1985.[5] If the OASDI programs do not borrow from HI, additional outlay reductions or revenue increases of about $12 billion in 1983, $17 billion in 1984, and $8 billion in 1985 would be needed to maintain a 12 percent reserve level in the combined OASDI funds.

Trust fund balances are extremely sensitive to the economy's performance. Thus, while balances as low as 12 percent will be adequate if economic conditions are not worse than expected, they accord the trust funds very little margin for error. Even relatively minor differences between forecasted and actual economic performance would endanger the timely payment of benefits. In fact, some experts consider a safe minimum

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3. The percentage varies over the course of a year because of the timing of annual benefit increases and of payroll tax revenue receipts.

4. These figures assume that an extension of the provisions allowing interfund borrowing will be enacted, or that tax rates will be reallocated between the funds. Reserves equal to 12 percent of fiscal year outlays are roughly equivalent to 8-9 percent of calendar year outlays. Outlays are higher over a calendar year, because COLAs are given in July, so the calendar year contains more months of benefits at the higher level. In addition, revenues are lowest in the October through December quarter, largely because more workers have reached the maximum taxable wage by that quarter.

5. P.L. 97-248 included tighter limitations on hospital reimbursements and in-hospital physician reimbursements, and imposed the HI tax on federal workers.

TABLE C-3. PROJECTIONS OF SOCIAL SECURITY TRUST FUND OUTLAYS, INCOMES, AND BALANCES (By fiscal year, in billions of dollars)[a]

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
					Old Age and Survivors Insurance					
Total Outlays	138.3	152.6	166.2	179.0	194.6	211.3	229.8	249.4	269.2	290.3
Income[b]	127.4	144.5	143.3	158.9	173.6	186.9	203.1	217.7	246.9	270.2
Year-end Balance	12.9	4.8	-18.4	-38.2	-59.2	-83.6	-110.2	-141.9	-164.2	-184.3
Start-of-year Balance as Percent of Outlays	17.2	8.5	2.9	-10.1	-19.6	-28.0	-36.4	-44.2	-52.7	-56.6
					Disability Insurance					
Total Outlays	18.4	19.2	19.7	19.7	20.1	21.2	23.0	25.3	27.7	29.8
Income[b]	21.3	18.7	27.3	33.6	39.1	43.3	48.4	53.2	64.2	72.9
Year-end Balance	6.4	5.9	13.5	27.4	46.4	68.6	94.0	122.0	158.4	201.5
Start-of-year Balance as Percent of Outlays	18.5	33.1	29.9	68.7	136.4	219.3	298.6	372.2	439.7	530.8
					Hospital Insurance					
Total Outlays	34.5	37.8	43.0	48.6	57.2	66.9	76.3	86.9	98.9	112.4
Income[b]	37.6	35.7	46.0	51.5	58.9	64.6	69.7	74.0	78.3	82.1
Year-end Balance	21.3	19.2	22.2	25.2	26.8	24.5	18.0	5.1	-15.5	-45.8
Start-of-year Balance as Percent of Outlays	52.5	56.3	44.6	45.8	43.9	40.1	32.2	20.7	5.2	-13.8

TABLE C-3. (Continued)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
						Combined OASI and DI				
Total Outlays	156.7	171.8	185.9	198.7	214.7	232.5	252.8	274.7	296.9	320.1
Income[b]	148.7	163.2	170.6	192.5	212.7	230.2	251.5	270.9	311.1	343.1
Year-end Balance	19.3	10.7	-4.9	-10.8	-12.8	-15.0	-16.2	-19.9	-5.8	17.2
Start-of-year Balance as Percent of Outlays	17.4	11.2	5.8	-2.5	-5.0	-5.5	-5.9	-5.9	-6.7	-1.8
						Combined OASI, DI, HI				
Total Outlays	191.1	209.5	228.8	247.2	271.9	299.4	329.0	361.5	395.8	432.5
Income[b]	186.3	198.9	216.6	243.9	271.6	294.8	321.2	344.9	389.4	425.3
Year-end Balance	40.5	29.8	17.6	14.3	14.0	9.5	1.7	-14.9	-21.3	-28.6
Start-of-year Balance as Percent of Outlays	23.7	19.3	13.0	7.1	5.3	4.7	2.9	0.5	-3.8	-4.9

SOURCE: Preliminary CBO estimates. Estimates for 1982 through 1985 based on economic assumptions used for the September 1982 CBO budget update. Projections for the remainder of the period are based on economic assumptions representing a quick return to a noncyclical trend growth path that incorporates the average post-World War II productivity growth rate of approximately 2 percent a year.

NOTE: Minus signs denote a deficit.

a. Includes provisions of 1982 Tax Equity and Fiscal Responsibility Tax.

b. Income to the trust funds is budget authority. It includes payroll tax receipts, interest on balances, and certain general fund transfers. Income in fiscal year 1983 reflects interfund transfers as authorized under P.L. 97-123. In order to illustrate better the operations of the trust funds under extended interfund or other types of borrowing or under tax rate reallocation, estimated interest payments owed by a trust fund when it shows a deficit are included as negative values in the income estimates of that trust fund.

level for trust fund balances to be 17 percent of annual outlays (roughly two months of benefits),[6] and others have suggested that much larger trust fund balances would be desirable over the long run to insulate the trust funds from the effects of economic shocks. The 1979 Advisory Council on Social Security, for example, proposed that balances be increased to 75 percent of outlays.

CBO projects shortfalls in OASDI revenues during the remainder of the 1980s, despite economic recovery and nonwithstanding a scheduled payroll tax increase in 1985. After the 1990 tax increase, OASDI income is projected to exceed outlays if the economy performs reasonably well. The ratio of balances to outlays will remain low throughout most of the 1990s, however, and will leave the OASDI trust funds vulnerable to poor economic performance. Further, balances in the HI fund are projected to decline rapidly after 1986 as a result of rising health care costs, and to become negative in 1990 and beyond.

OPTIONS

There are three approaches that could improve trust fund balances in the short run--benefit reductions, tax increases, and revenue transfers from other sources. The first two of these would also help to reduce the overall federal budget deficit.

Benefit Reductions

The total reduction in Social Security benefits enacted so far has been fairly small in comparison to the size of the program, but since comparatively few beneficiaries have had their benefits reduced, the impact on those who have has been relatively large. In contrast, broad-scale benefit reductions affecting all beneficiaries in a similar way could produce much greater savings, and would not disproportionately affect specific recipients.

The major across-the-board benefit reduction option that could provide significant savings in the next two to three years would be to lower cost-of-living adjustments (COLAs). Because Social Security is such a large program, even relatively small differences in COLAs can have major budgetary implications.

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6. See, for example, the discussion in David Koitz, "Summary of the 1982 Social Security Trustees' Report," Congressional Research Service (April 1982).

Various proposals have been made to reduce cost-of-living adjustments temporarily in order to make up for past overindexing. Doing so would lessen the rate of growth of Social Security outlays and help maintain the solvency of the Social Security trust funds through the next few years. It would also reduce federal deficits by reducing outlays for entitlement programs. But it would mean that future benefit increases and benefit levels would be permanently lower than under current law since the level of benefits used as a base from which to calculate future benefit increases would be permanently reduced.

The options examined here have been chosen to illustrate several commonly proposed types of COLA reductions; clearly, many other ways to reduce COLAs could also be designed. The options include delaying the COLA by three months, freezing benefits for one year, and capping the COLA at 4 percent in 1983, 1984, and 1985. In addition, one of the stabilization options examined in Chapter VI, indexing by changes in wages minus 1.5 percentage points, would also produce small savings in the short term. Savings from these indexing changes over the next three years would range from about $7 billion for a permanent shift of the cost-of-living adjustment from July to October to $21 billion for eliminating the cost-of-living increase to be paid in July 1983, under the CBO's most recent economic forecast (see Table C-4).

For all of these options, the total savings achieved relative to current law, the timing of the savings--which would affect the solvency of the trust funds--and the total impact on benefit levels would depend on the rate of inflation over the next few years. Since inflation rates have fallen this year and are expected to continue to be lower than in the recent past, none of these options would result in savings as large as if the options had been enacted in 1980 or 1981.

The main rationale for such COLA cuts is that benefits have been overindexed in the recent past. In addition, current Social Security recipients are generally receiving rates of return on their contributions for Social Security that are very high compared to those that will be received by future retirees, both because of past flaws in the indexing system and because rates of return will fall in any case as the system matures. Thus, if reductions in benefits are deemed necessary, it may be appropriate to consider cuts that would affect current recipients, as opposed to those that would focus exclusively on new retirees.

On the other hand, reductions in current law cost-of-living adjustments would lower the value of Social Security benefits over time, and would lead to a higher incidence of poverty among the aged and disabled. Since such reductions are cumulative from year to year, real benefits would

TABLE C-4. PROJECTED SAVINGS RELATIVE TO CURRENT LAW OF FOUR PROPOSALS TO REDUCE THE COLAs IN SOCIAL SECURITY, 1983-1985 (By fiscal year, in billions of dollars)

Proposal	1983	1984	1985	Total Savings 1983-1985
Delay COLA 3 Months to October 1	2.2	2.1	2.8	7.1
Freeze Benefit Levels for One Year (Eliminate 1983 COLA)	2.2	9.2	9.5	20.9
Cap COLA at 4 Percent for 3 Years	0.6	2.7	4.4	7.7
Set COLA at Wage Growth Minus 1.5 Percentage Points[a]	0.2	0.9	0.9	2.0

SOURCE: Congressional Budget Office.

a. This option would result in small savings in outlays in the short run because of projected low productivity growth. Over the longer run, however, outlays could be either higher or lower than under current law, depending upon the relative behavior of wages and prices.

be further reduced in each year of retirement if COLA cuts were sustained over an extended period; consequently, benefit levels, especially for the very old, could decline substantially. While programs such as Supplemental Security Income (SSI) and food stamps provide some measure of protection for Social Security recipients with low incomes, the stringent asset test under SSI and the unwillingness of many aged and disabled persons to apply for means-tested benefits prevent many of the elderly poor from participating in these programs. One approach that would cut federal spending while protecting the poorest of the elderly would be to combine

reductions in Social Security cost-of-living adjustments with liberalizations of the asset test and benefit levels under SSI.

Tax Increases

A second approach that would both improve Social Security trust fund balances and reduce the overall budget deficit would be to increase taxes for Social Security.

One option would be to increase payroll tax rates sooner than now scheduled (see Table C-5).[7] For example, added revenues of $17 billion over the next three years would result if the 1985 and 1986 tax rate increases were to begin in 1984 instead, raising the combined OASDHI tax rates in 1984 from 6.7 percent to 7.15 percent. Moving the increase scheduled for 1990 to 1984 would generate about $46 billion in added revenues, and would raise OASDHI tax rates to 7.65 percent in 1984.

Alternatively, new taxes could be imposed, with revenues dedicated to the trust funds. For example, Social Security coverage could be extended to some or all of those workers not now covered--for the most part, federal, state, and local government employees. Requiring that new employees in currently noncovered jobs contribute to Social Security, for example, would generate $5.6 billion in additional trust fund receipts during fiscal years 1983-1985. The impact on the budget as a whole would be substantially less, however, since some of the added trust fund revenues would come from employer taxes paid by federal agencies, and some could come from employee contributions now made to the Civil Service Retirement program.

Another possibility would be to subject a portion of Social Security benefits--for example, the half that one might associate with the employer share of the payroll tax--to the personal income tax, and to direct the $18 billion in new receipts over the next three years to the trust funds. In essence, this would be a benefit cut, but in contrast to indexing changes, it would protect low-income Social Security recipients who generally would still pay no taxes. Instead, the tax increases would be focused on higher-income beneficiaries, particularly those with substantial income in addition

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7. Social Security cash benefits and medical services paid for by the HI fund are financed primarily through the payroll tax, which now provides about one-third of total federal tax revenues. Payroll tax rate increases are scheduled under current law for 1985, 1986, and 1990, and an increasing proportion of federal revenues are expected to come from this source by the end of the decade.

TABLE C-5. ADDITIONAL OASDHI REVENUES UNDER VARIOUS TAX CHANGES (By fiscal year, in billions of dollars)

	1983	1984	1985	Total 1983-1985
Increase Payroll Tax Rate				
Move 1985 and 1986 increases to January 1, 1984	--	10.8	6.2	17.0
Move 1985, 1986, and 1990 increases to January 1, 1984	--	22.8	23.3	46.1
Extend Social Security Coverage to Federal Employees[a]				
New employees only	0.2	0.7	1.3	2.2
All employees	5.2	7.0	7.8	20.0
Extend Social Security Coverage to All Noncovered Employees[a]				
New employees only	0.5	1.8	3.3	5.6
All employees	10.6	15.7	17.3	43.8
Tax 50 Percent of OASI Benefits[b]	4.5	6.5	7.0	18.0

SOURCE: Congressional Budget Office.

NOTE: Unless otherwise indicated, the effective date is January 1, 1983.

a. Estimates of additional revenues reflect the extension of the HI tax to federal workers effective January 1, 1983.

b. These estimates assume that the trust funds would receive the added revenues as income tax liabilities accrue, rather than when income taxes are actually paid. Estimates are preliminary and subject to revision.

to their Social Security benefits. To protect low- and moderate-income beneficiaries further, the tax might be limited to that portion of benefits that raised total incomes above a given level ($12,000 for an individual and $18,000 for a couple, for example), although this would generate substantially less revenue.[8]

The main argument for providing additional funds for Social Security through tax increases is to avoid major reductions in benefits that would cause hardships for some recipients. On the other hand, substantial tax increases--especially those that would increase the costs of employment--may be undesirable as long as unemployment remains high. Payroll tax increases would also lower the rate of return on contributions received by current workers, which under present law will already be lower, in general, than the rate received by current beneficiaries. Finally, although tax increases could reduce the federal deficit, they would not affect the share of gross national product devoted to federal spending.

General Revenue Transfers

The third possible approach to the problem of declining Social Security balances--transfers from other parts of the budget--would improve the financial status of the Social Security trust funds, but would not contribute to reducing federal deficits. Transfers could be funded either directly from general revenues or by loans from the Treasury to the trust funds, to be repaid when the trust funds recover from their short-term financing difficulties.[9]

General revenue borrowing could be an attractive option if there were no overall budget deficit problem, since it would permit gradually phasing in changes that would improve the trust fund balances in the long run. At present, however, using general revenue transfers as the sole means of resolving the Social Security financing problem would place the entire

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8. Unemployment insurance benefits, for example, are now taxed in this manner.

9. Under the "intermediate B" assumptions of the 1982 Social Security Trustees' Report, the combined OASDI trust funds will have positive and increasing balances beginning in 1994. Under CBO's assumptions, however, the HI fund is projected to encounter ever-declining balances beginning in 1987, and would be unable to pay back any borrowing from the Treasury.

burden of deficit reductions on other portions of the budget. This approach could also be viewed as lessening the fiscal discipline imposed by payroll tax financing.

In the short run, however, even a combination of benefit reductions and tax increases such as those described above could still leave the trust funds with temporarily inadequate balances, particularly if economic conditions prove worse than expected. The enactment of a limited provision for general revenue borrowing when trust fund balances become low might therefore be considered, in order to provide the trust funds with an automatic margin of safety.

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